

Figure 1

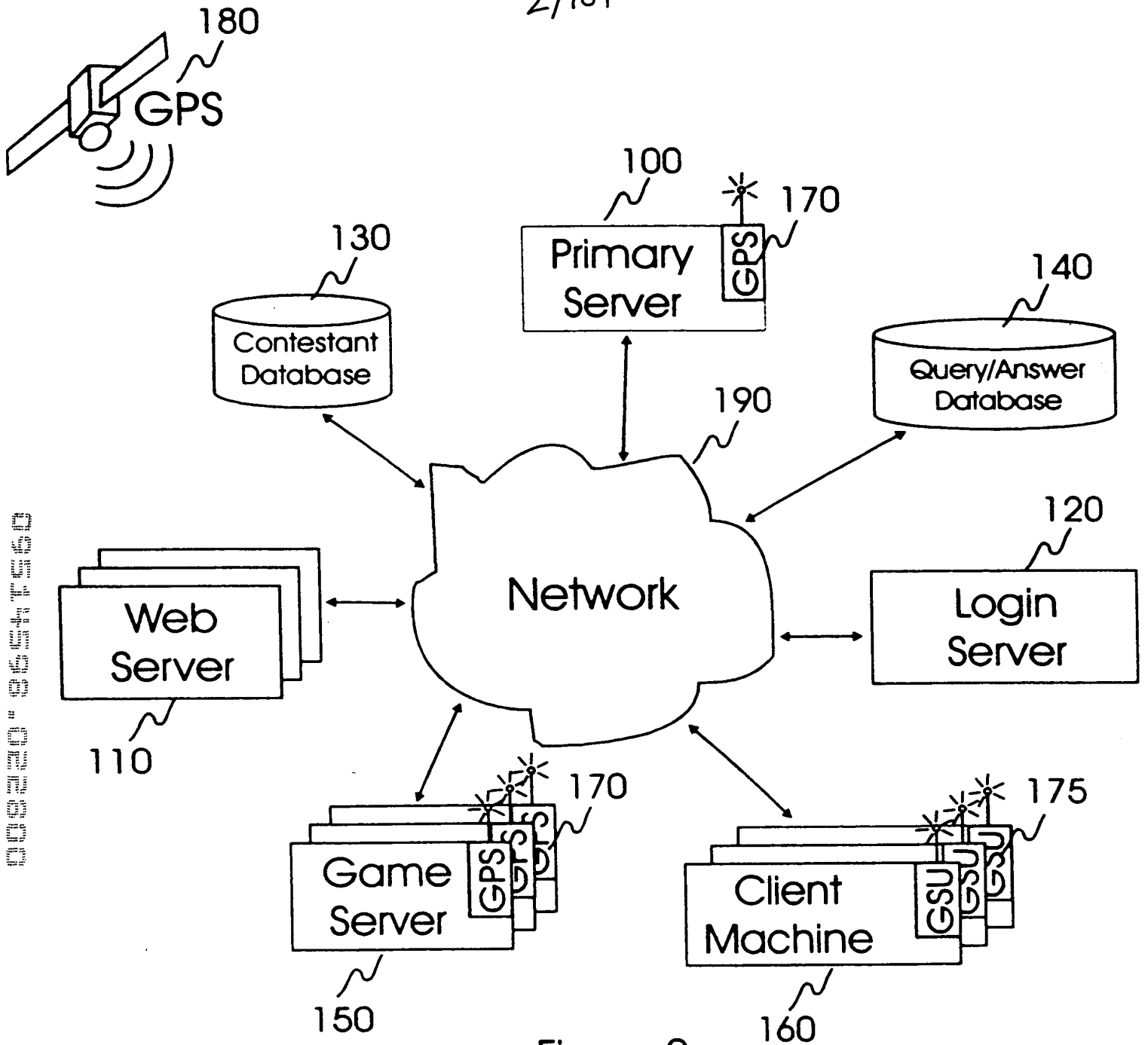


Figure 2

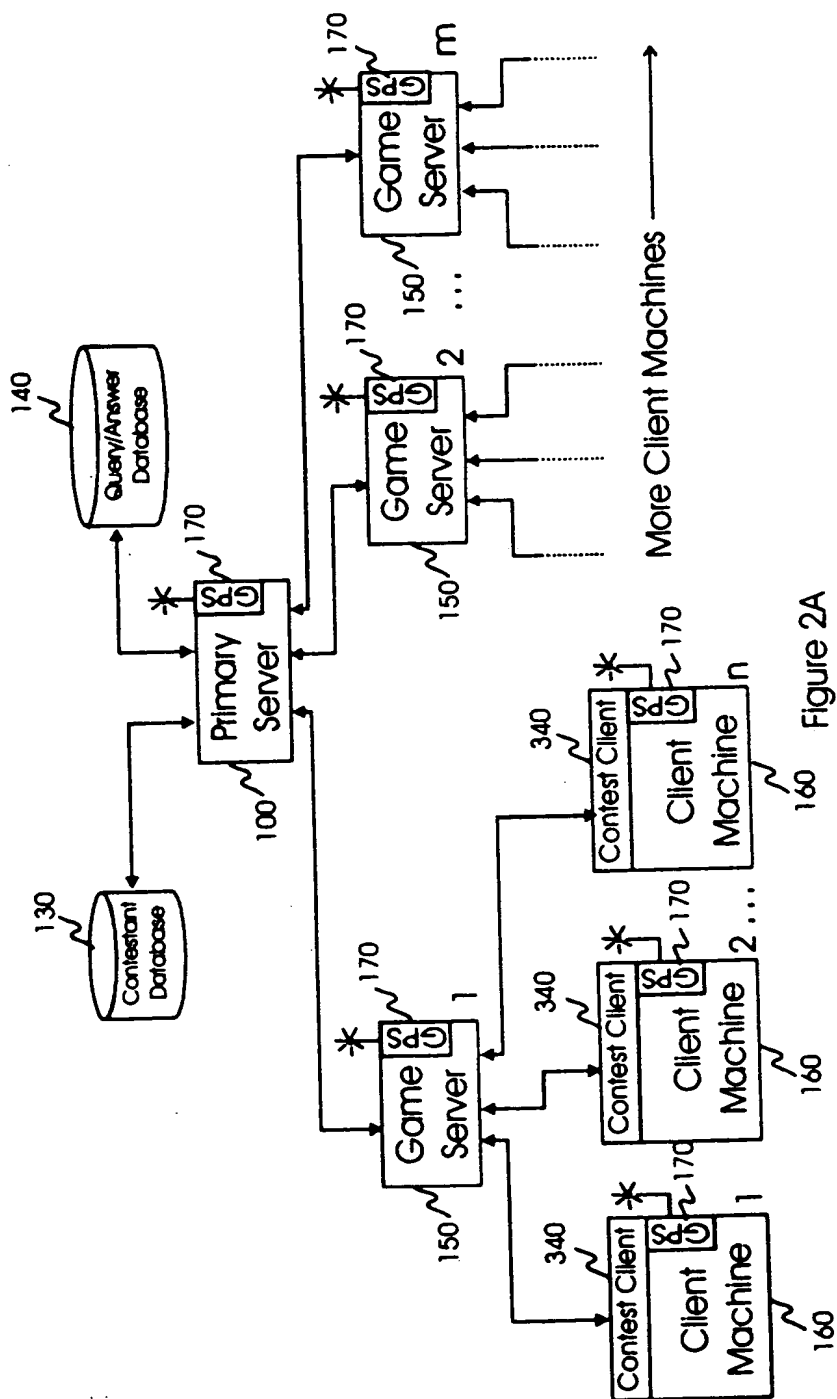


Figure 2A

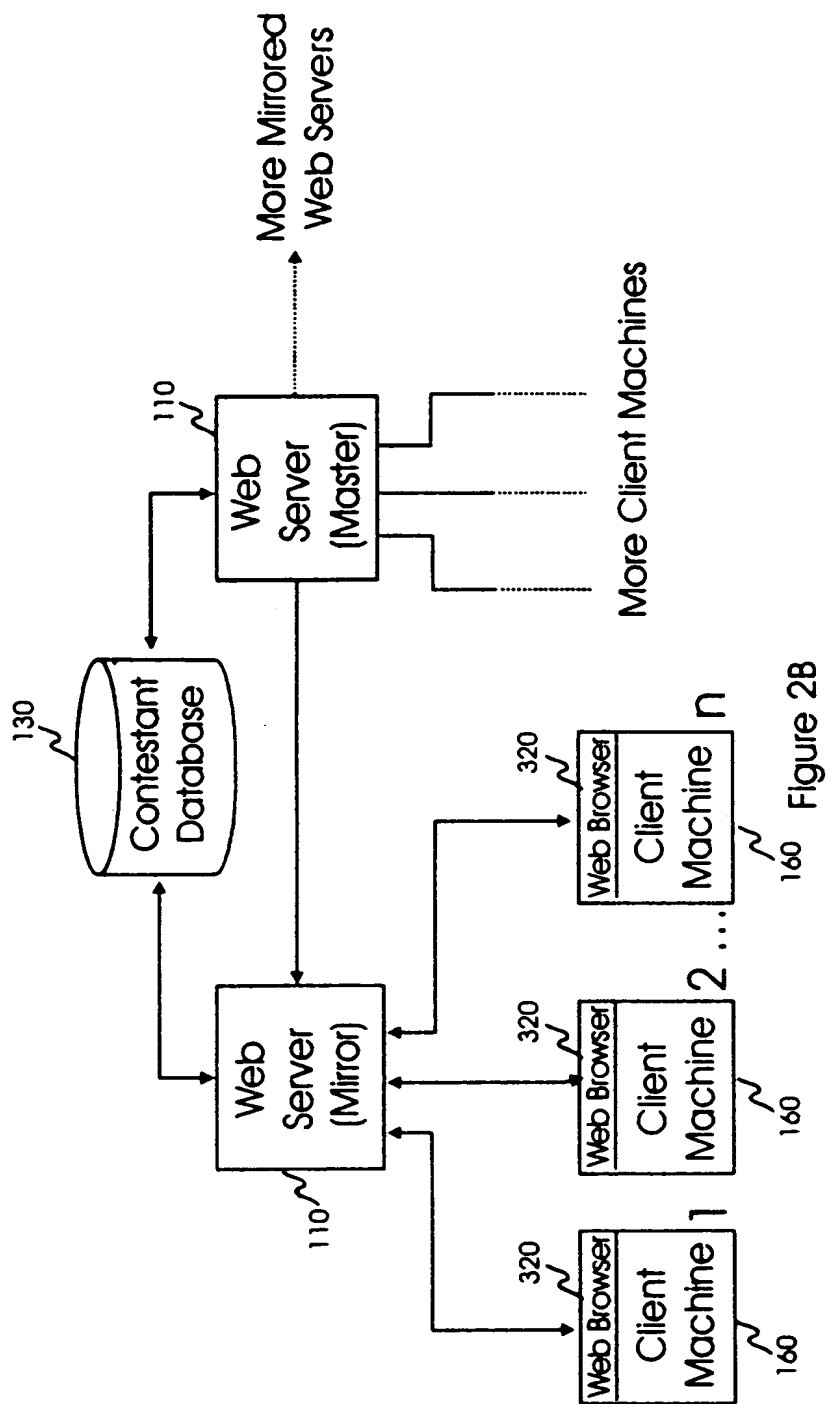


Figure 28

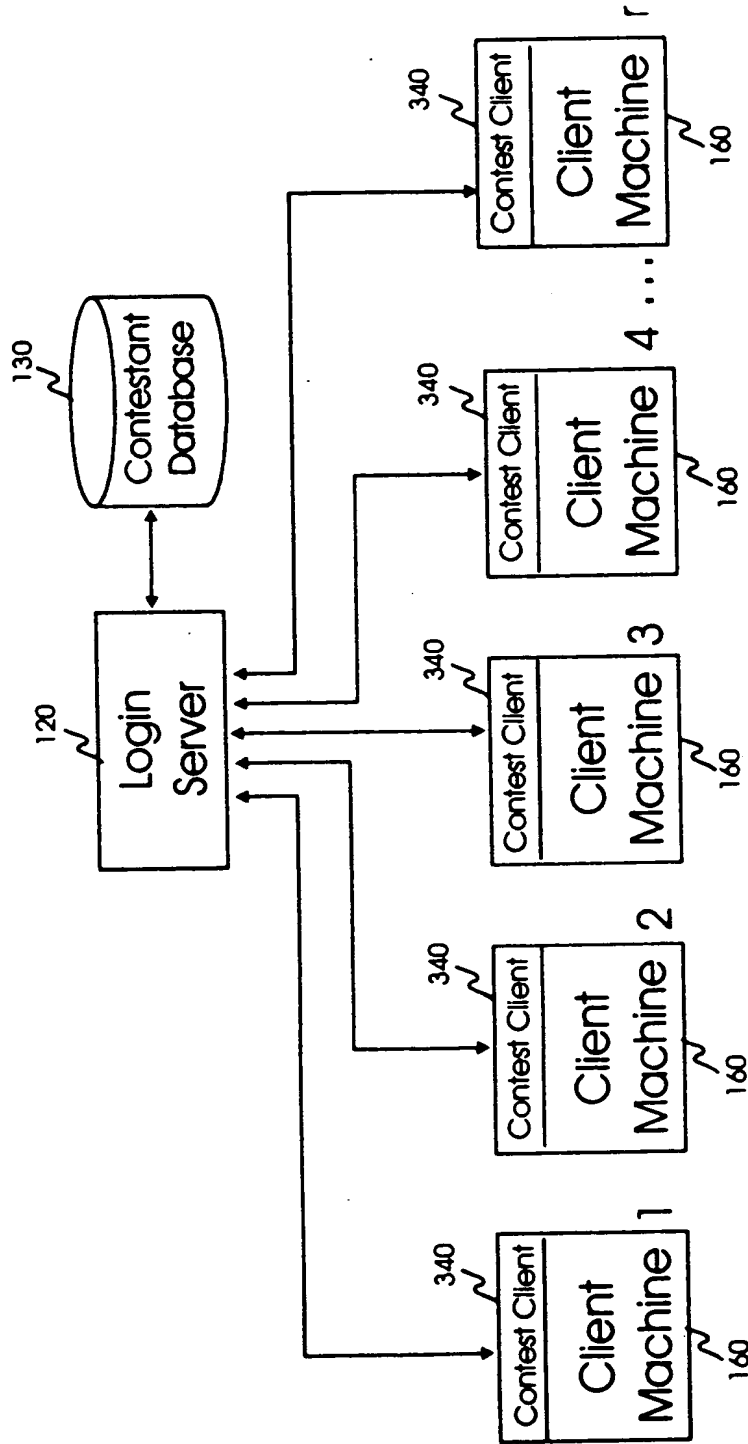


Figure 2C

# Client Machine 160

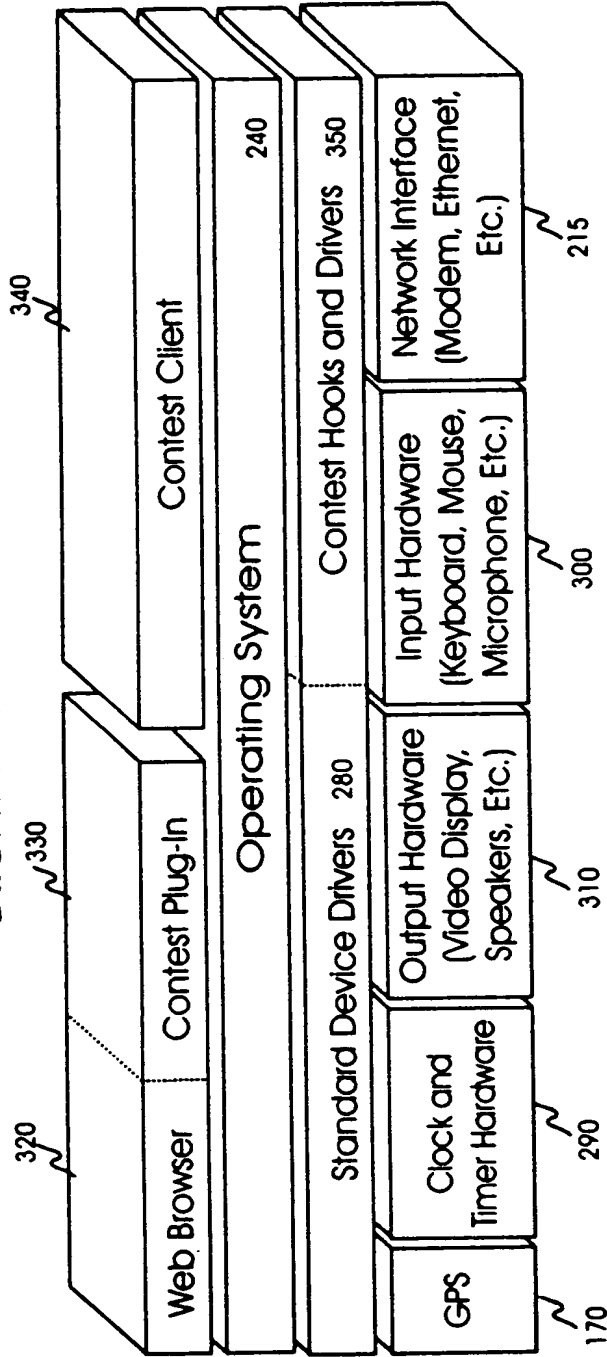


Figure 2D

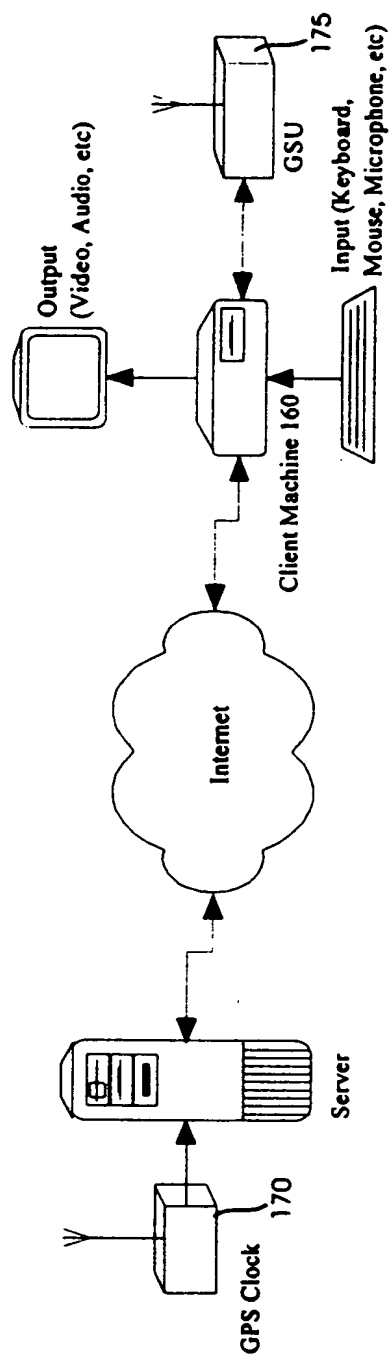


Figure 2D1





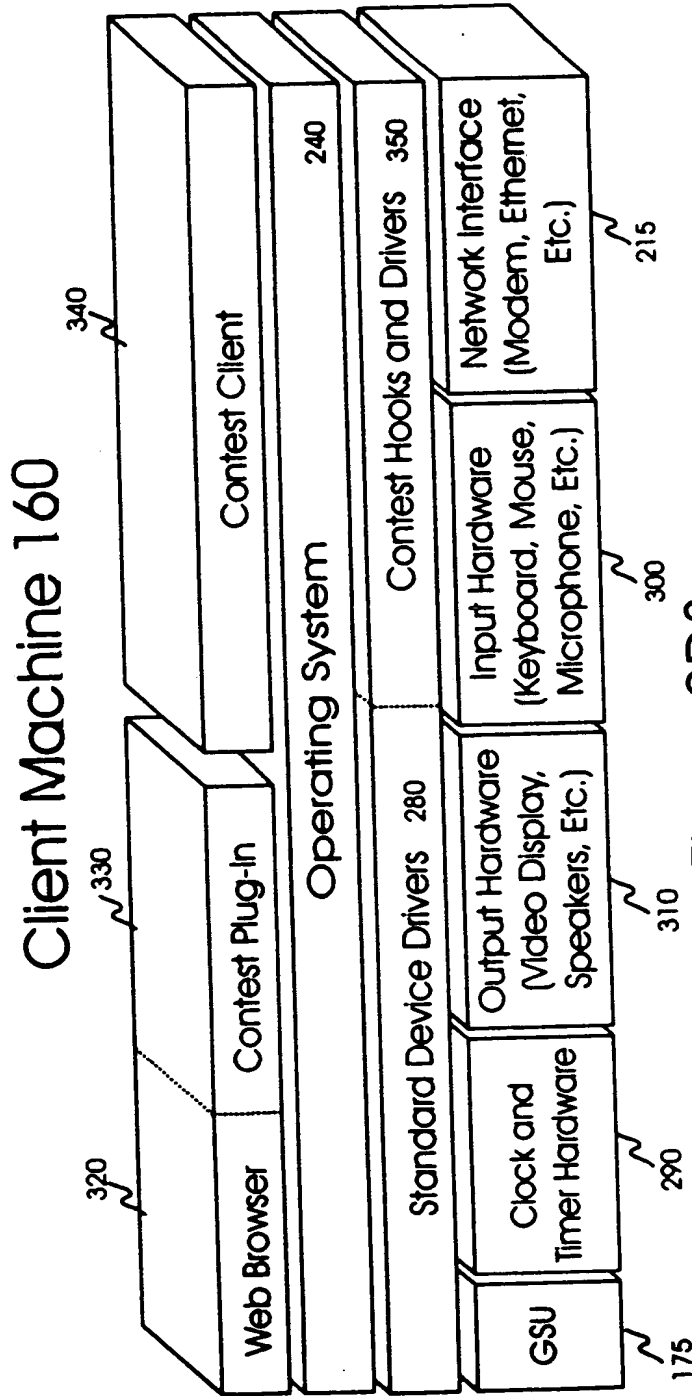


Figure 2D3

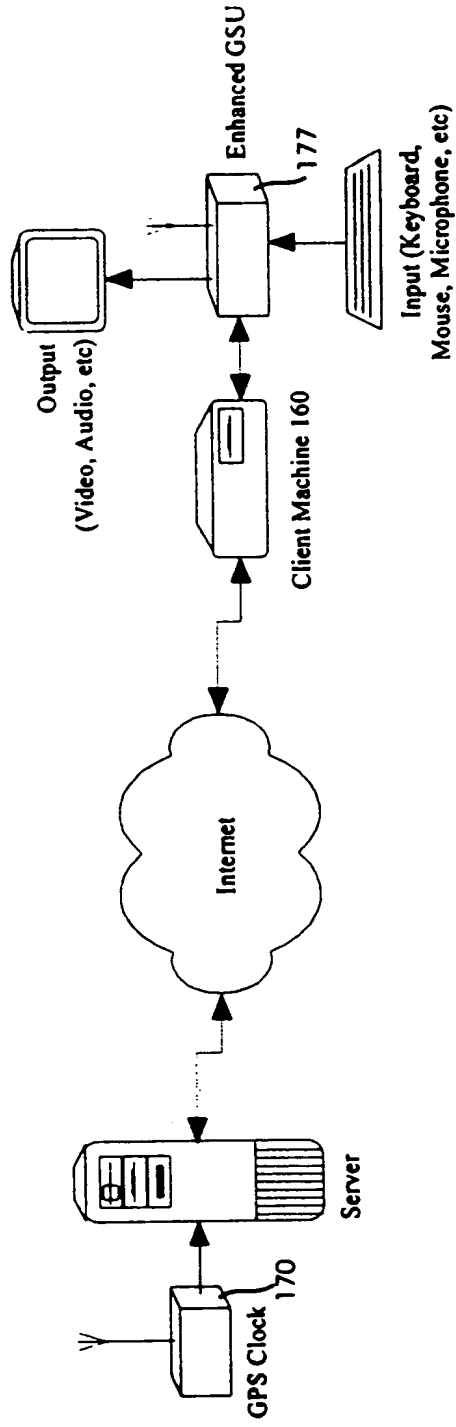


Figure 2D4

## Enhanced Global Synchronization Unit 177

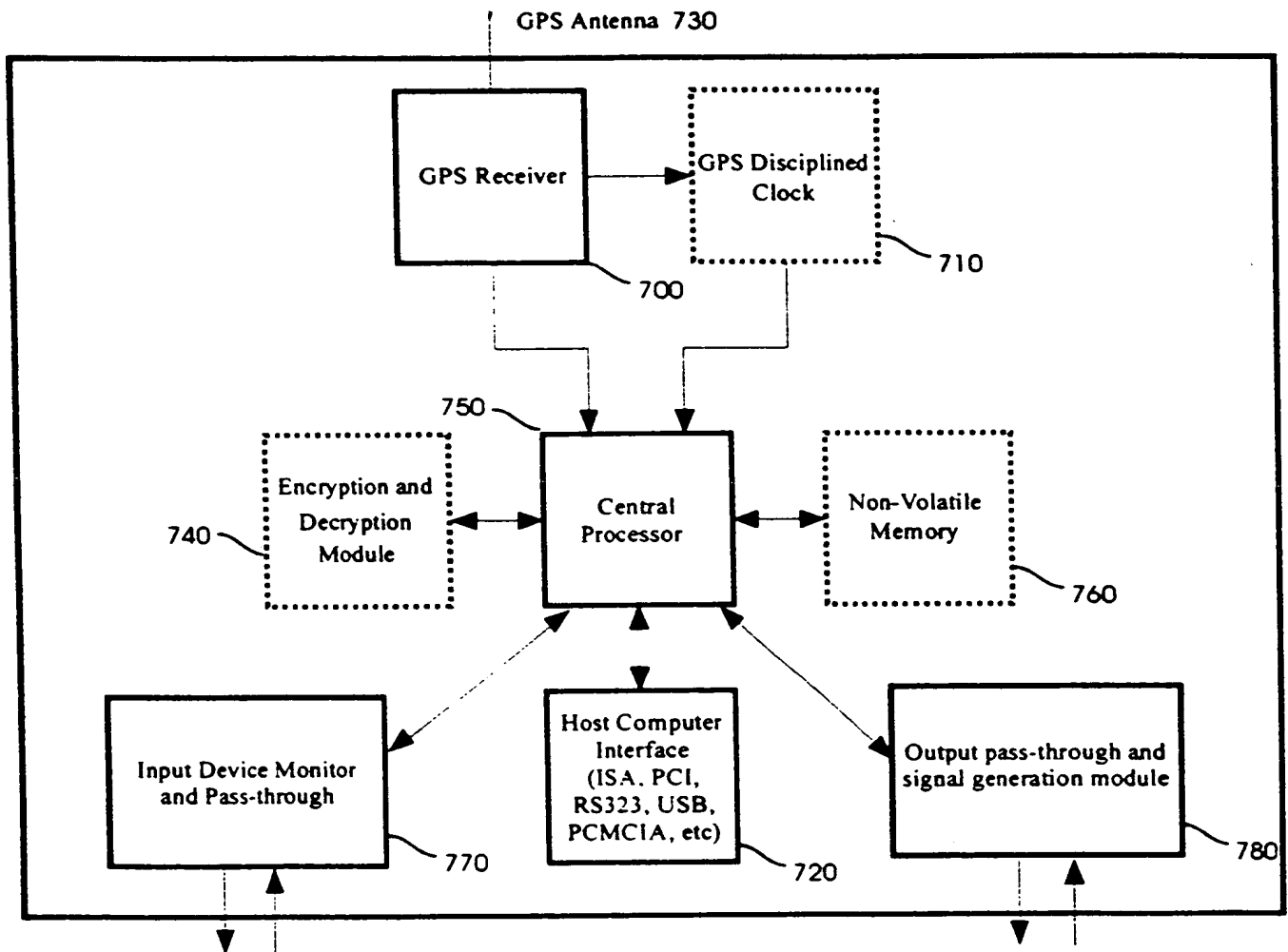
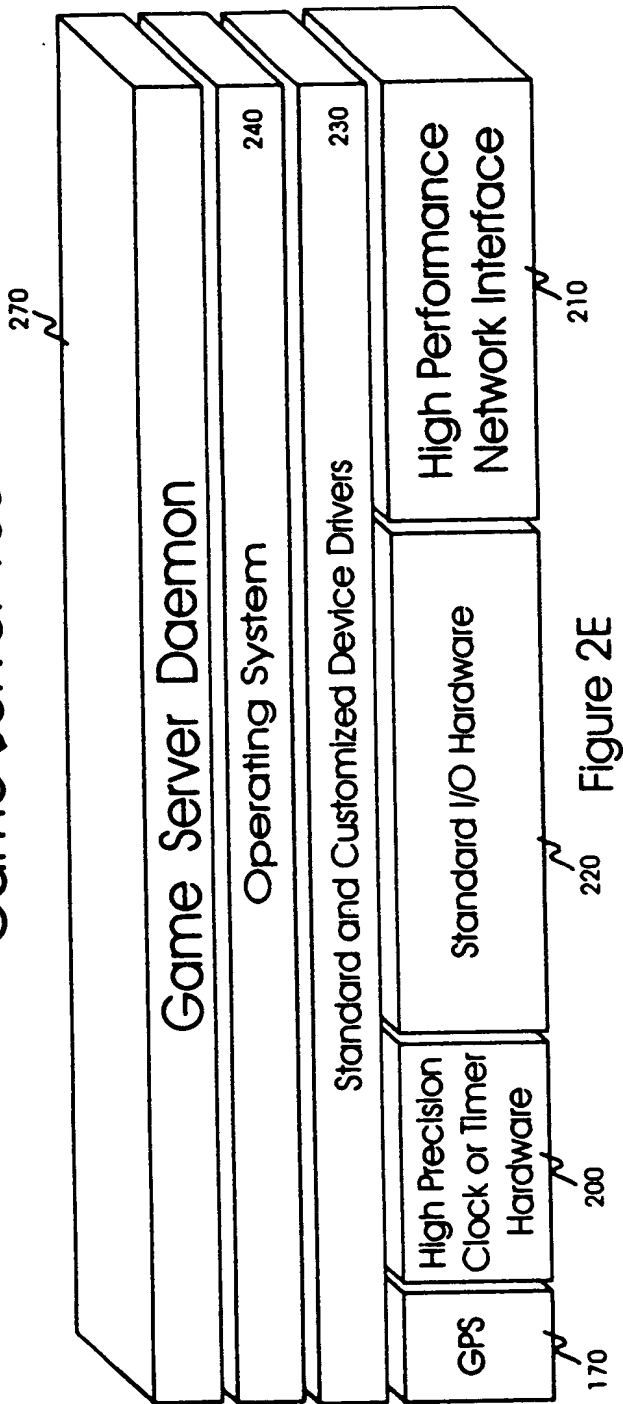
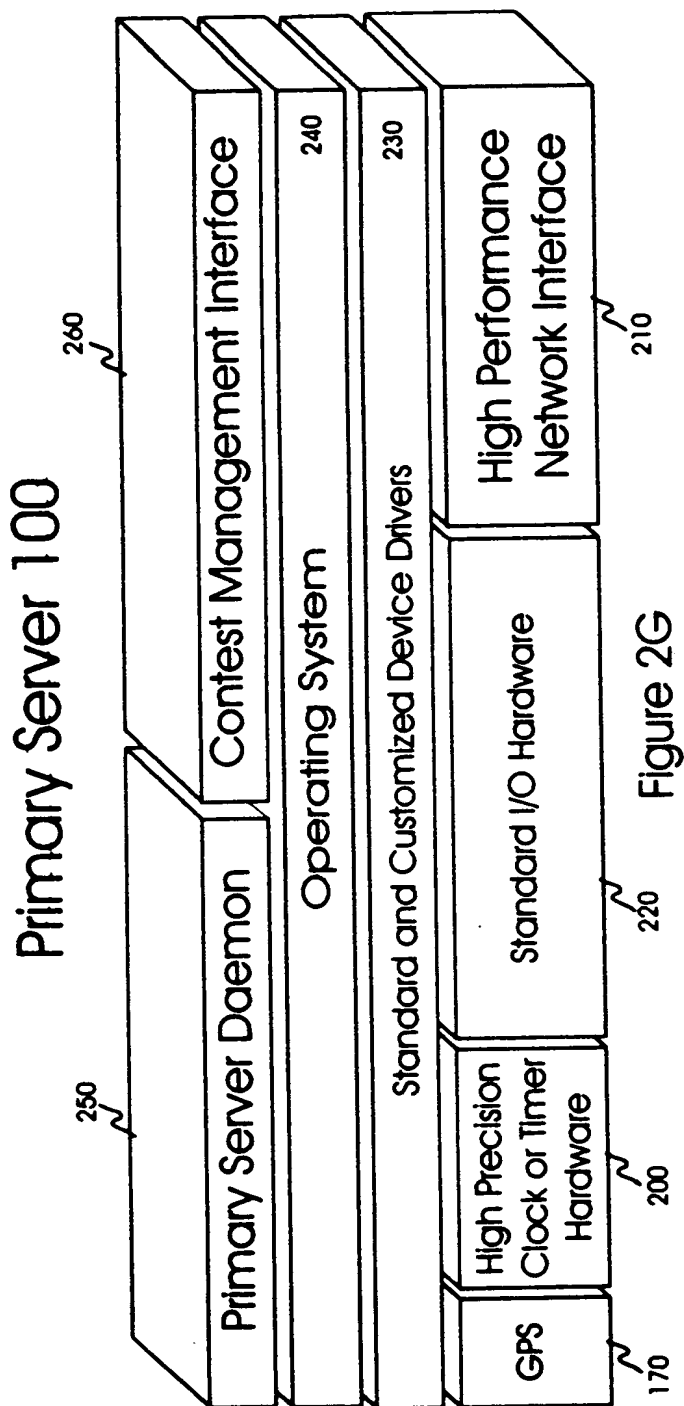


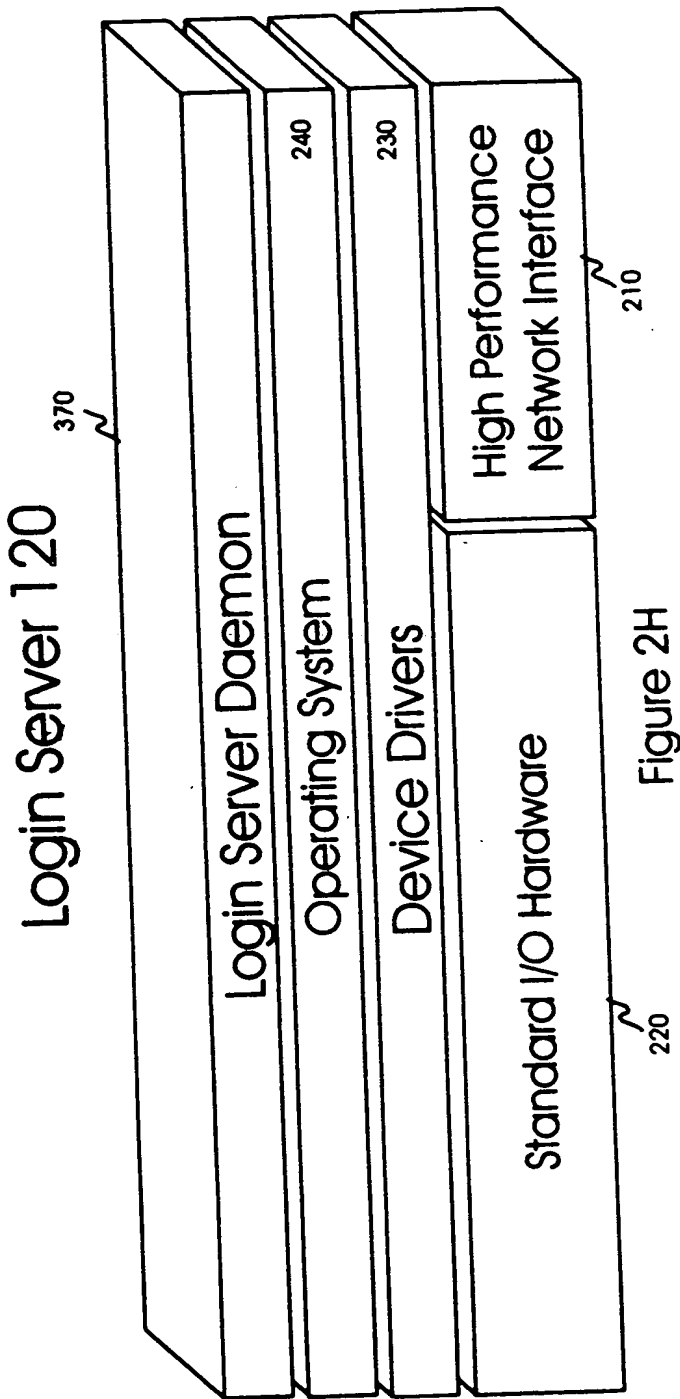
Figure 2D5

# Game Server 150









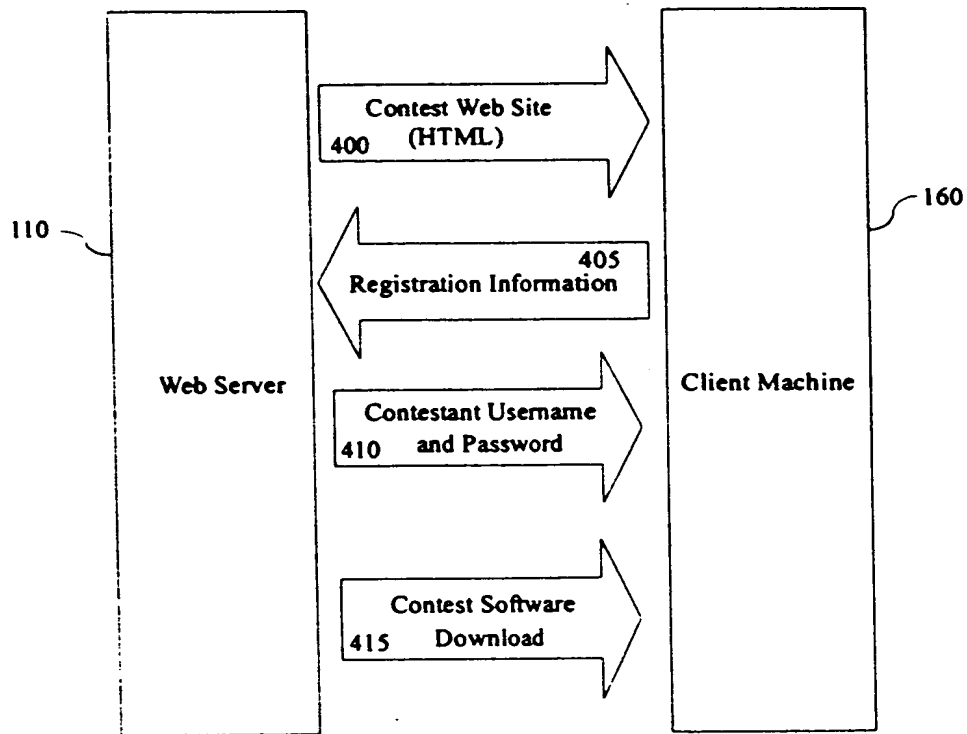


Figure 3A



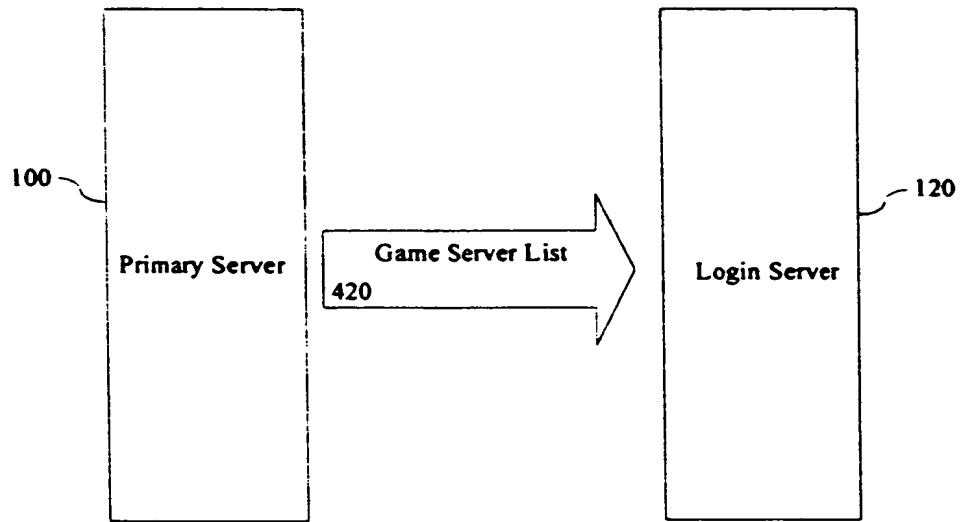


Figure 3B

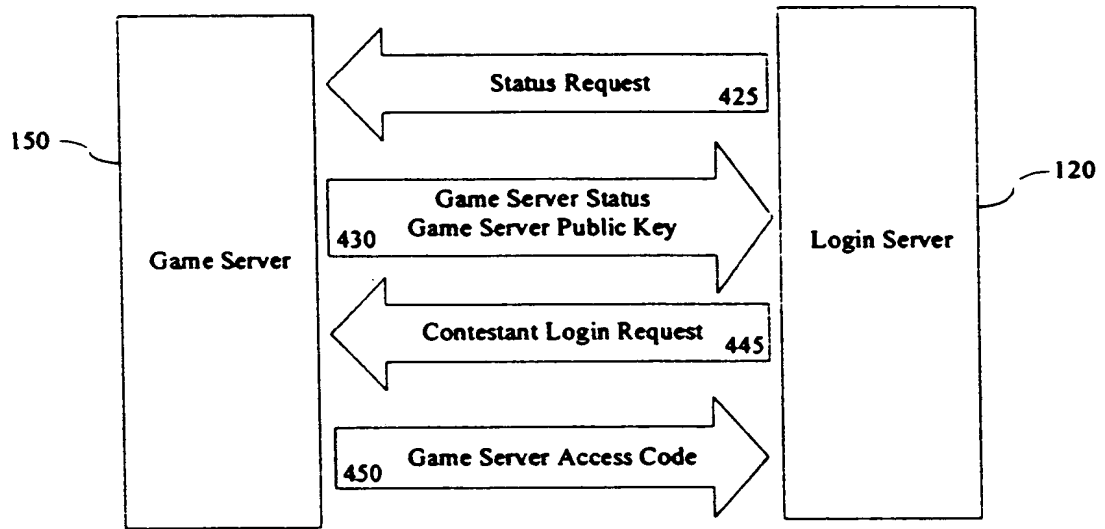


Figure 3C

19/101

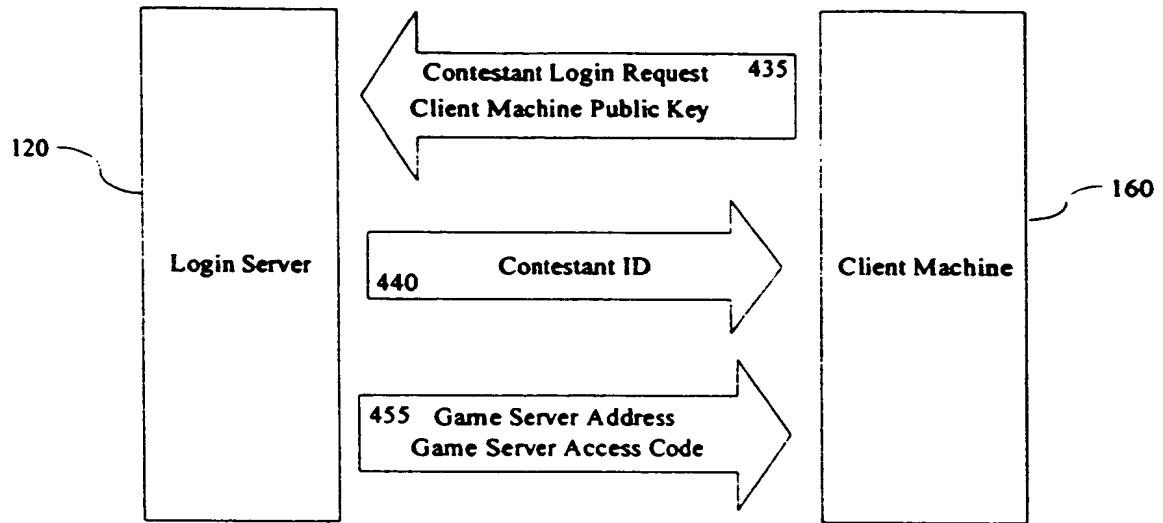


Figure 3D

20/101

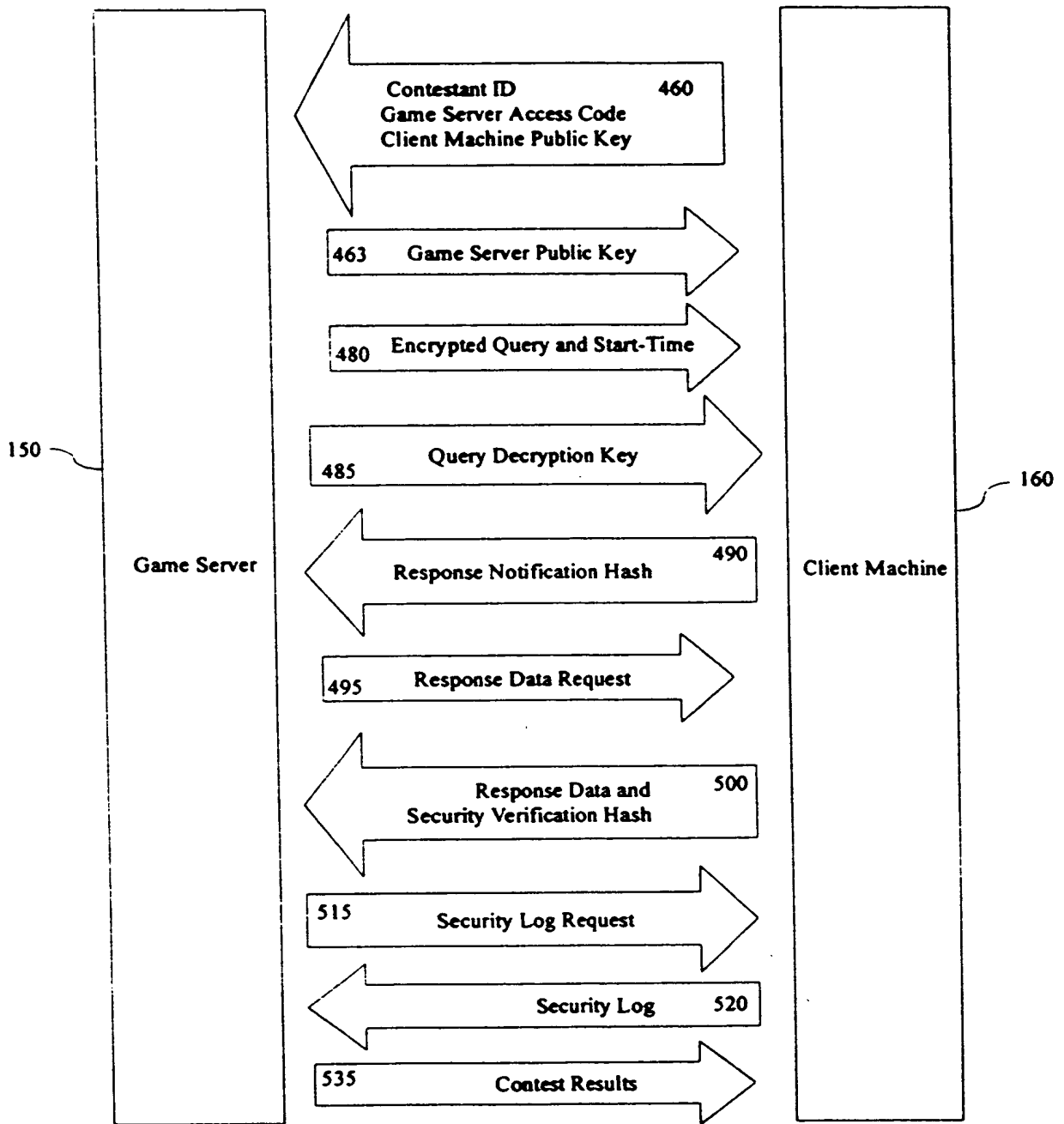


Figure 3E

21/101

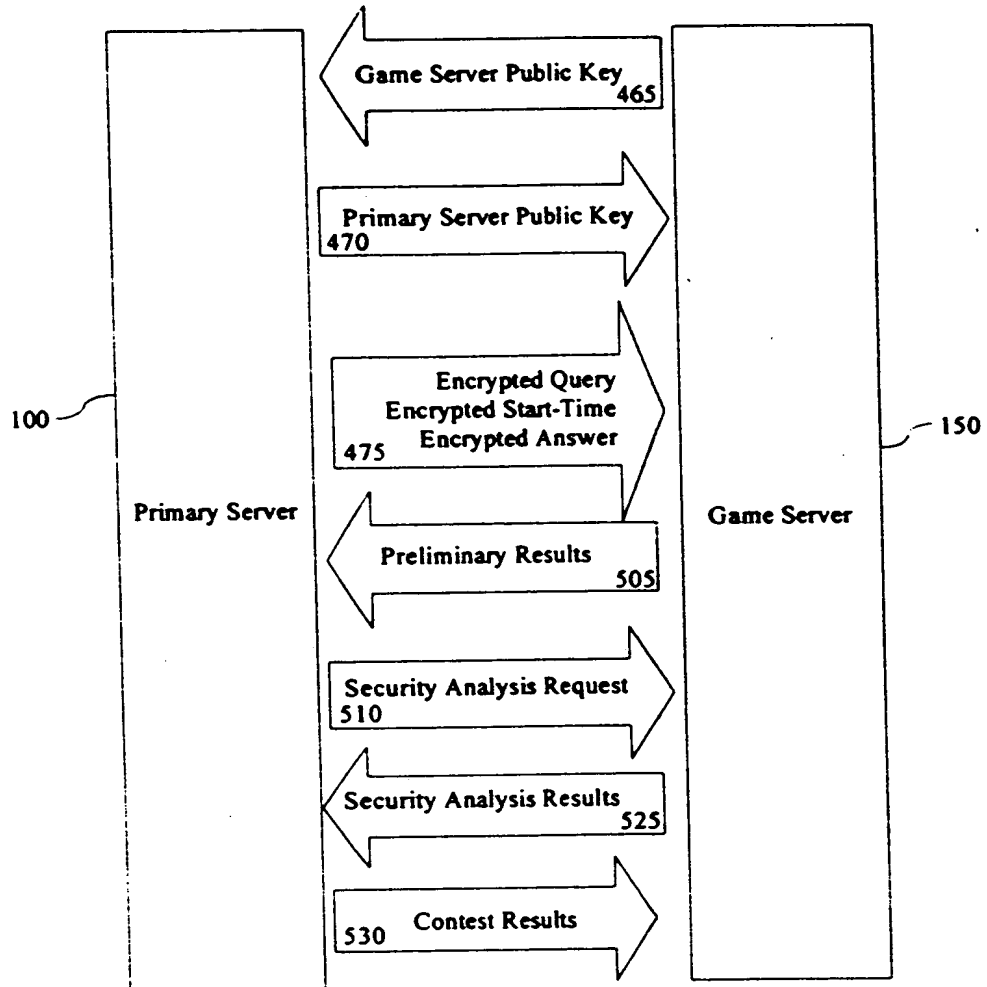


Figure 3F

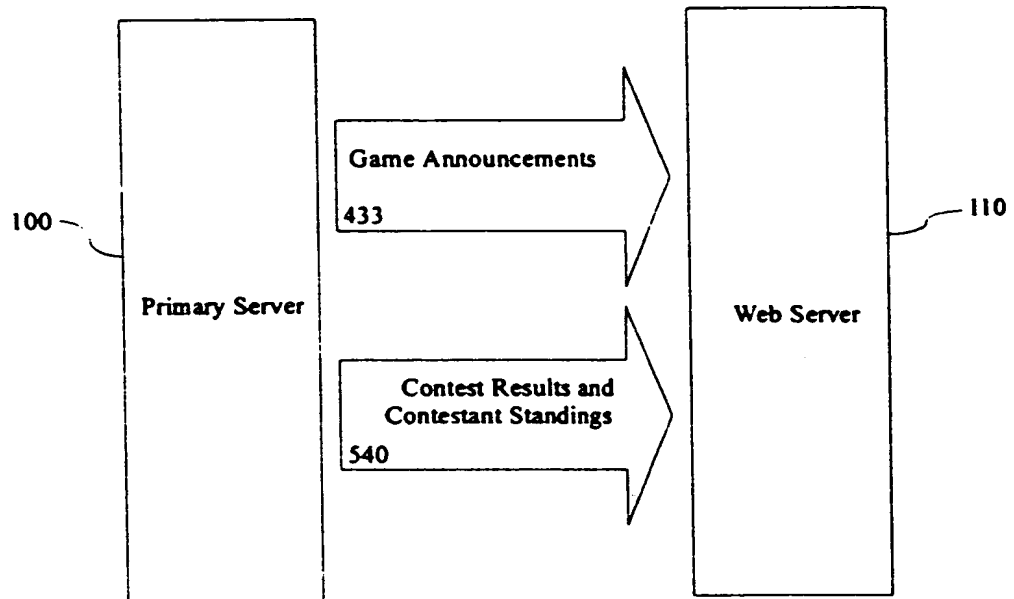


Figure 3G

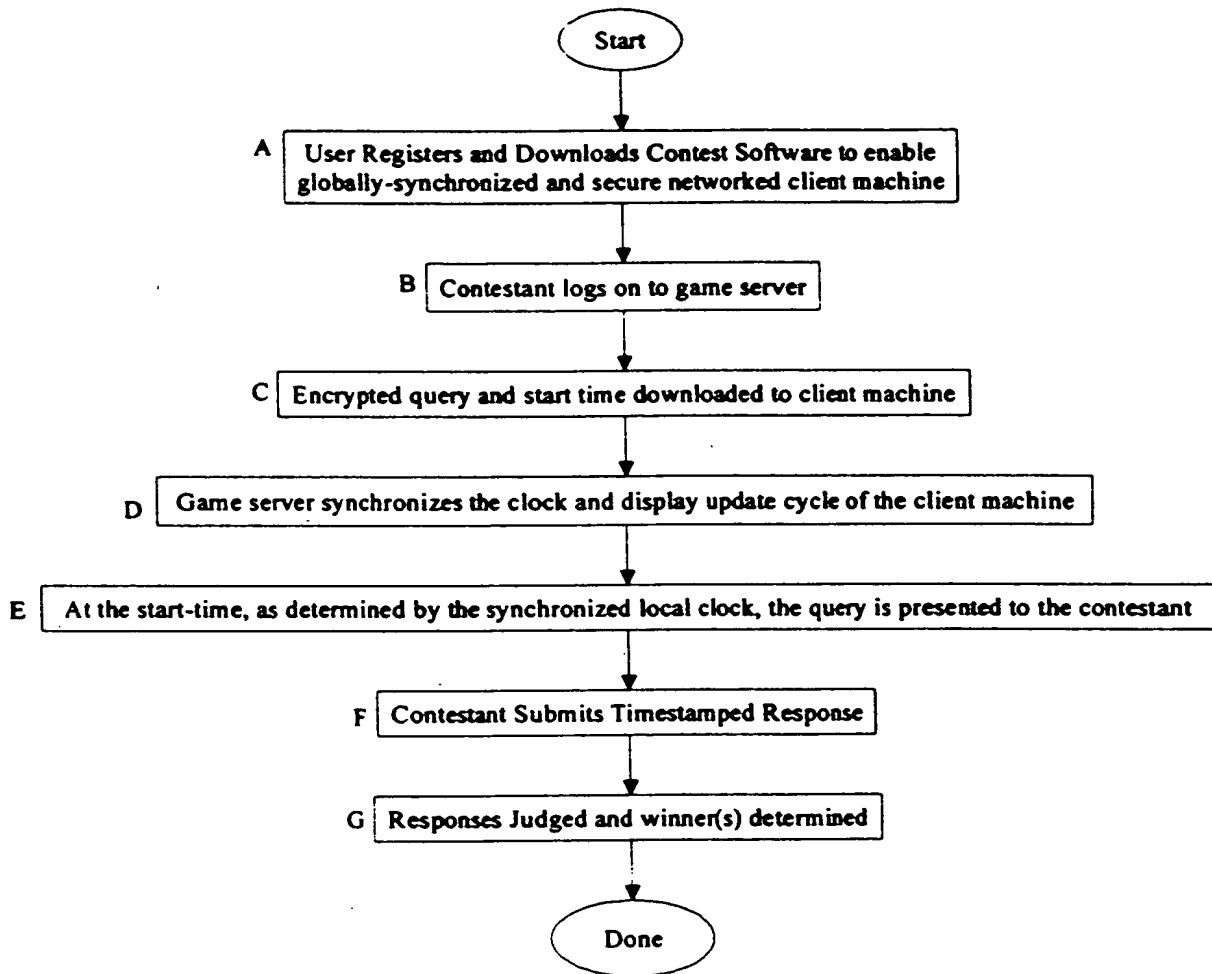
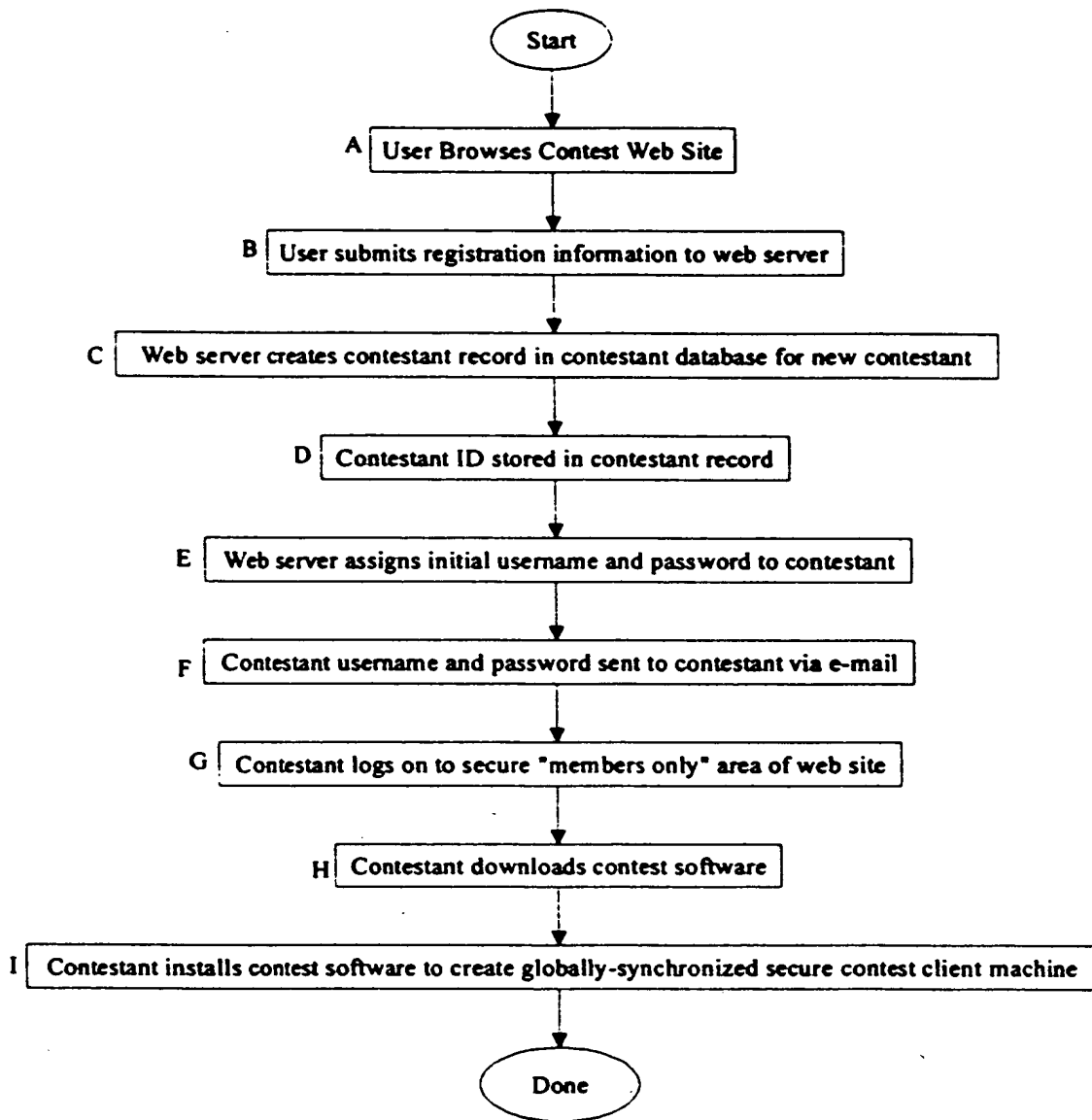


Figure 4

## User Registers and Downloads Contest Software



**Figure 4A**



25/101

# Contestant logs on to game server

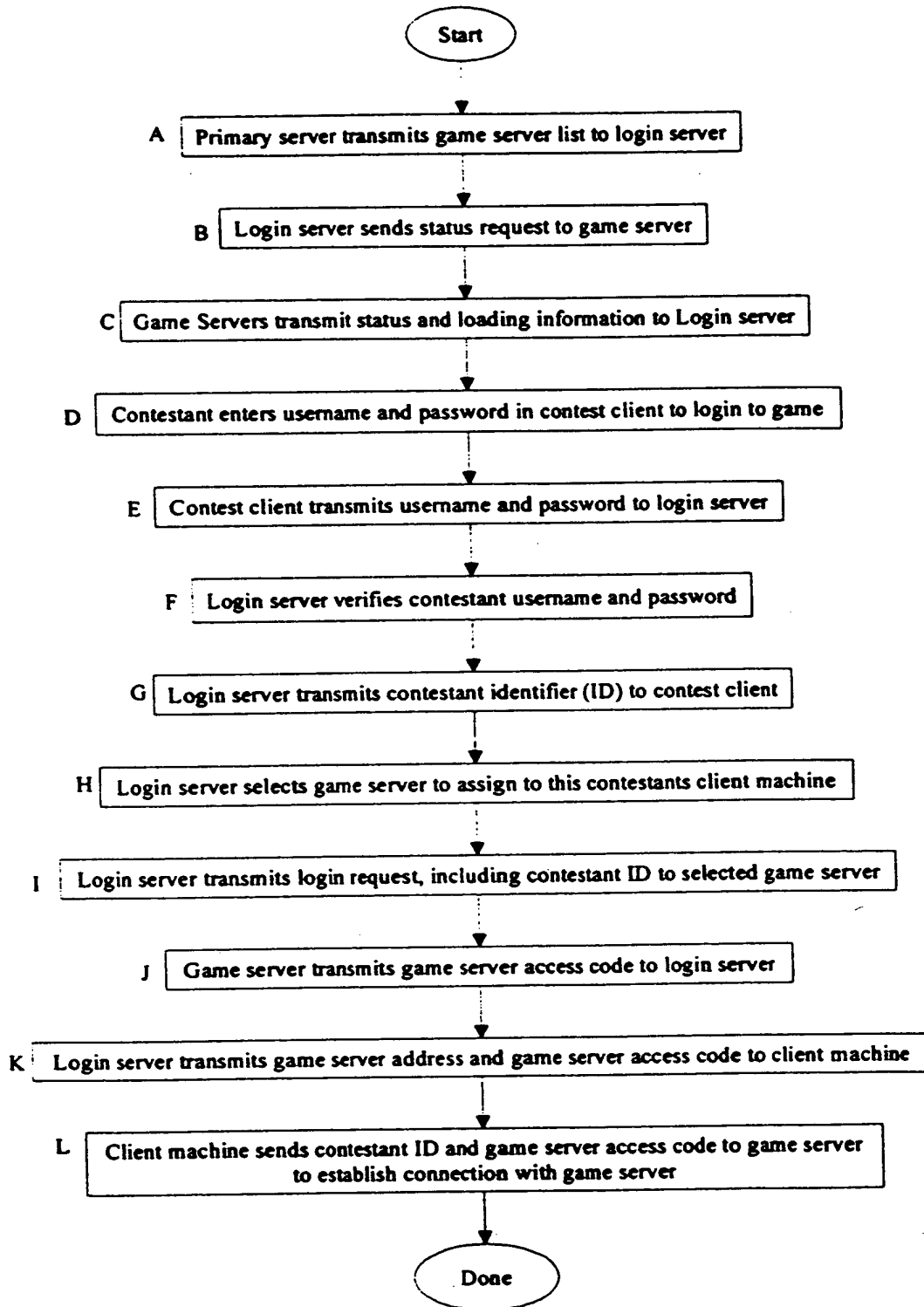


Figure 4B

# Encrypted query and start-time downloaded to client machine

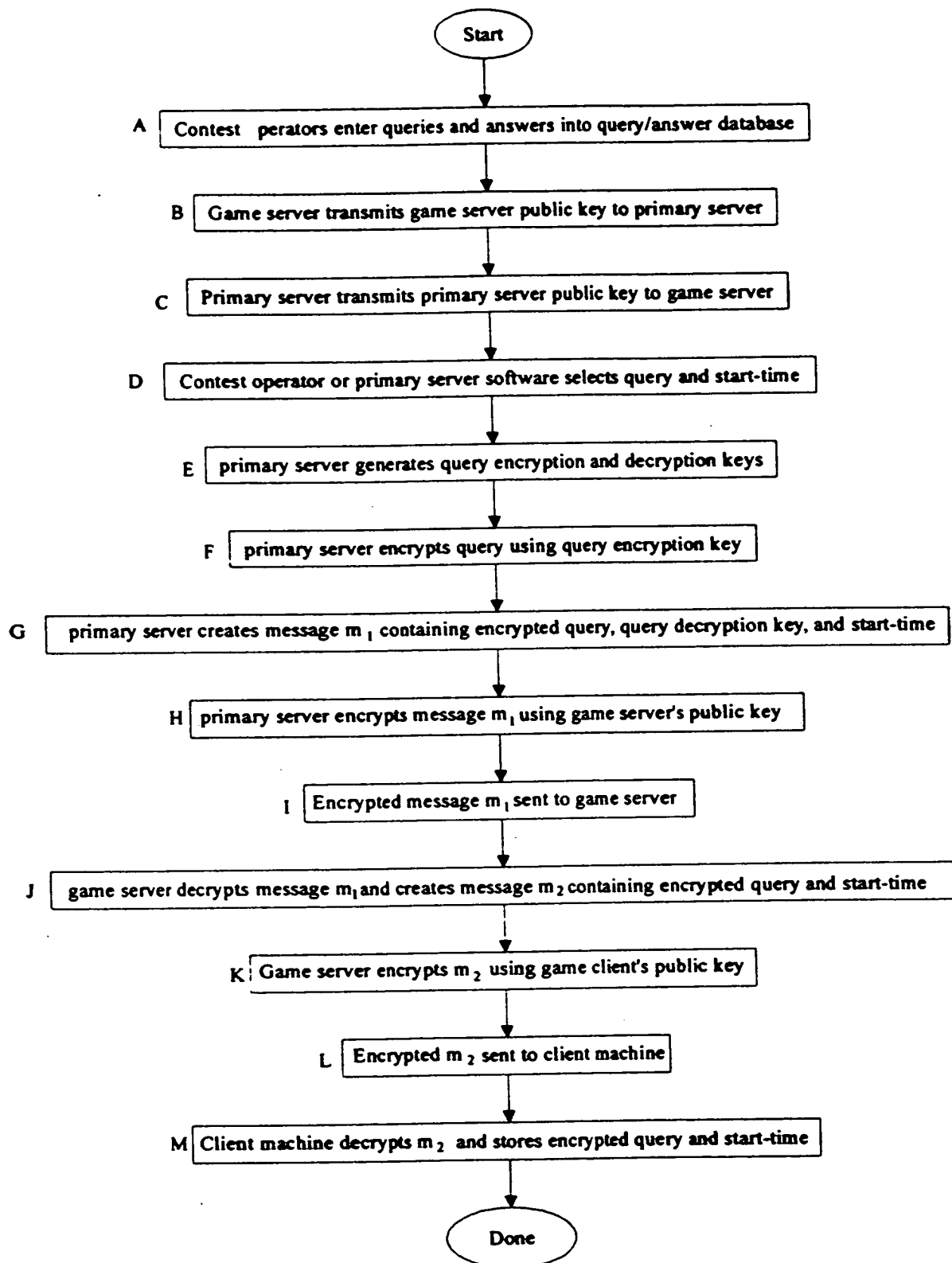


Figure 4C

**Client machine clock characterized and display update cycle synchronized with global clock**  
(Client Machine With Basic GSU)

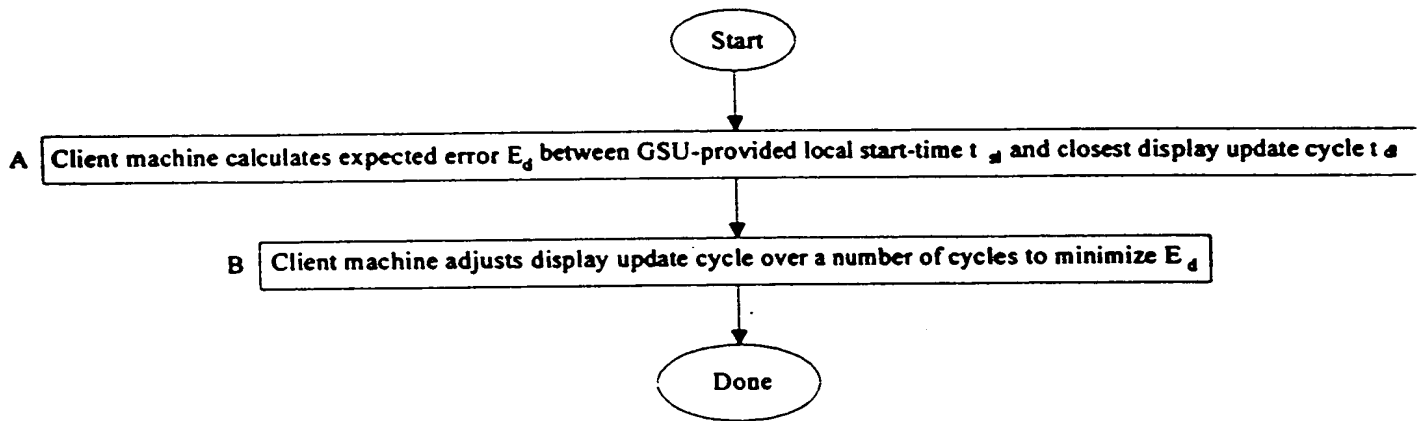
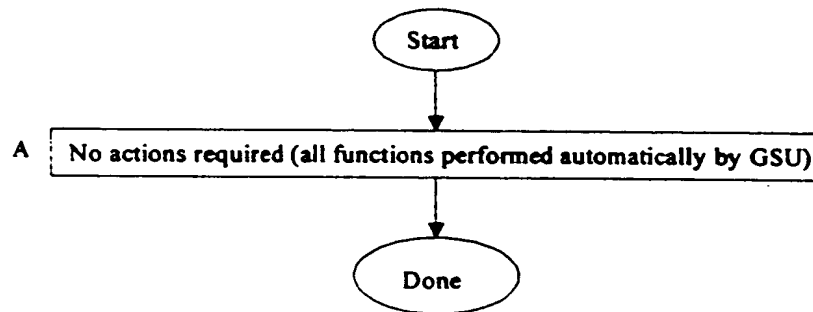


Figure 4D1

**Client machine clock characterized and display update cycle synchronized with global clock**  
(Client Machine With Enhanced GSU)



**Figure 4D2**

**Client machine clock characterized and display update cycle synchronized with global clock**

(Client Machine Without GSU)

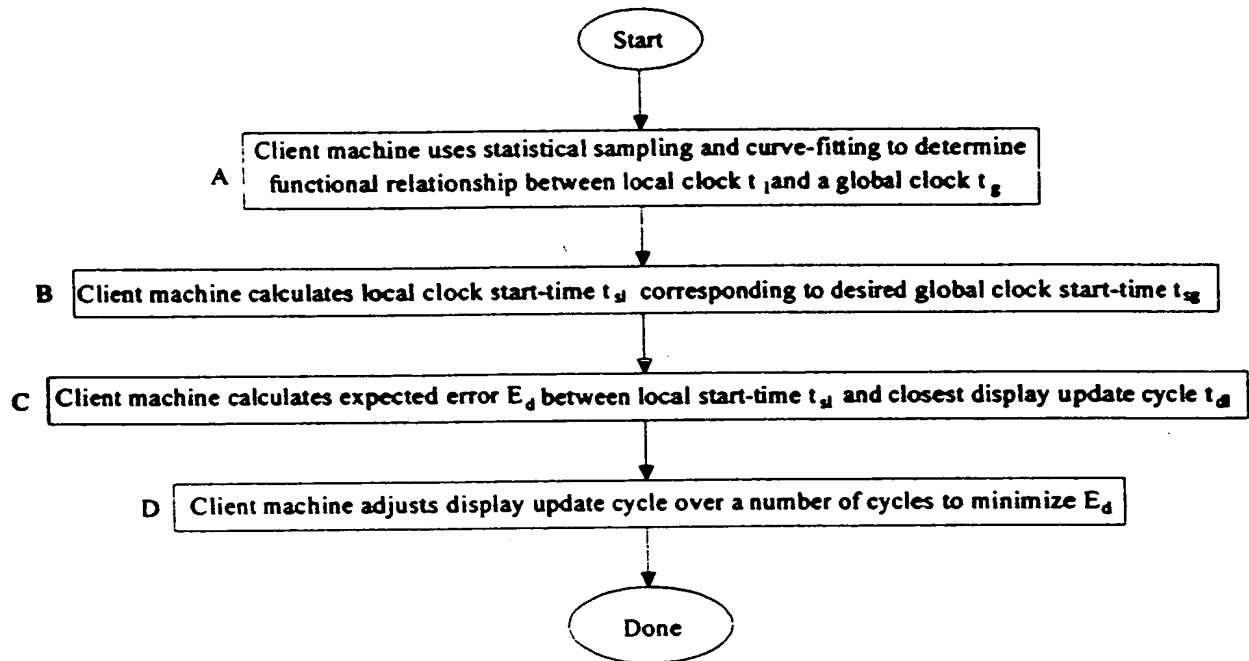


Figure 4D3

30/101

At start-time, the query is presented to the contestant

(Client Machine With Basic GSU)

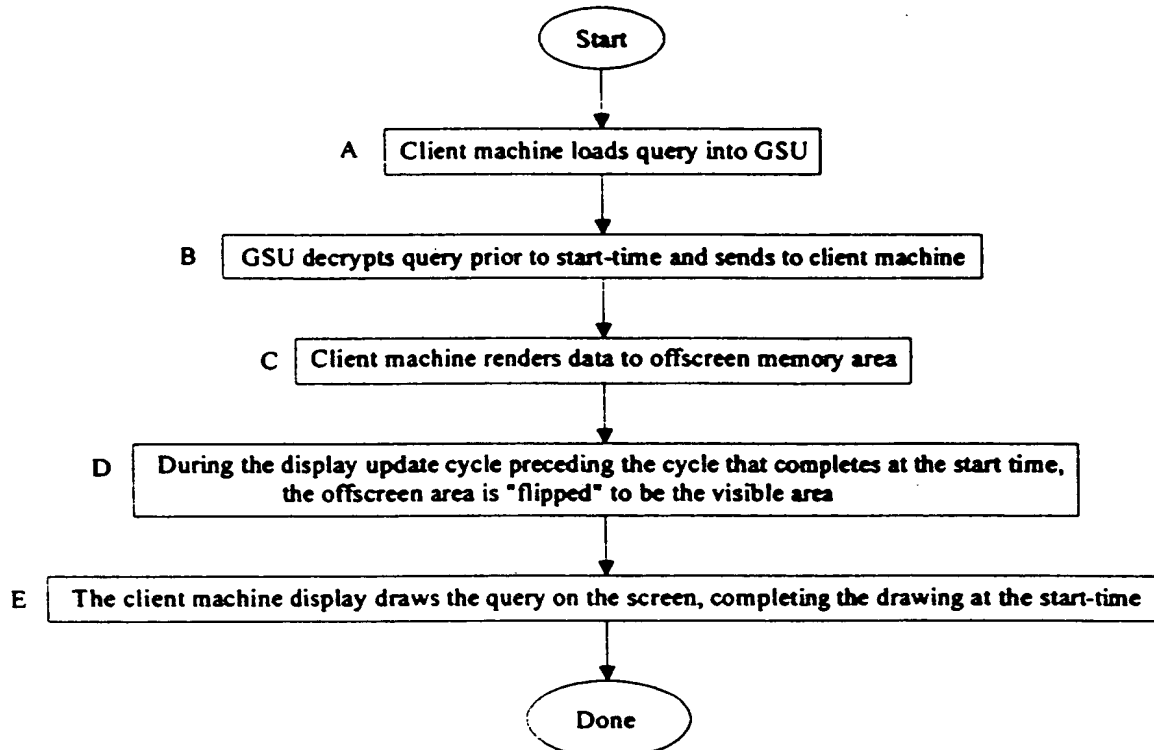


Figure 4E1

At start-time, the query is presented to the contestant

(Client Machine With Enhanced GSU)

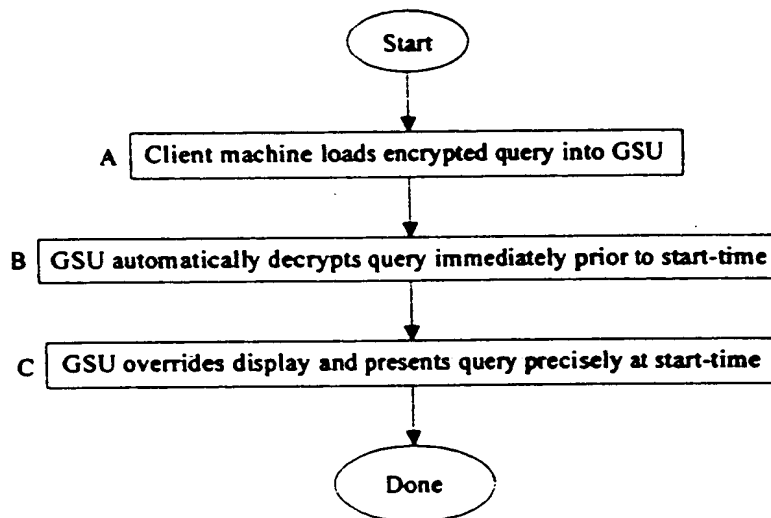


Figure 4E2

At start-time, the query is presented to the contestant

(Client Machine Without GSU)

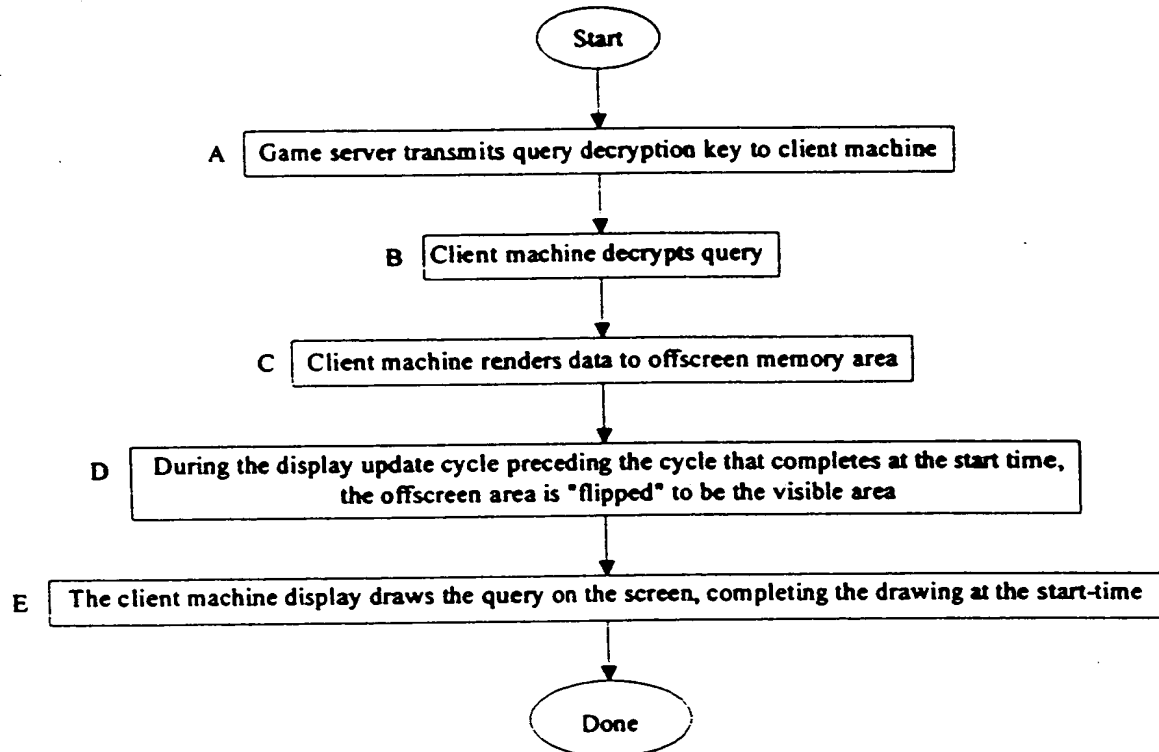
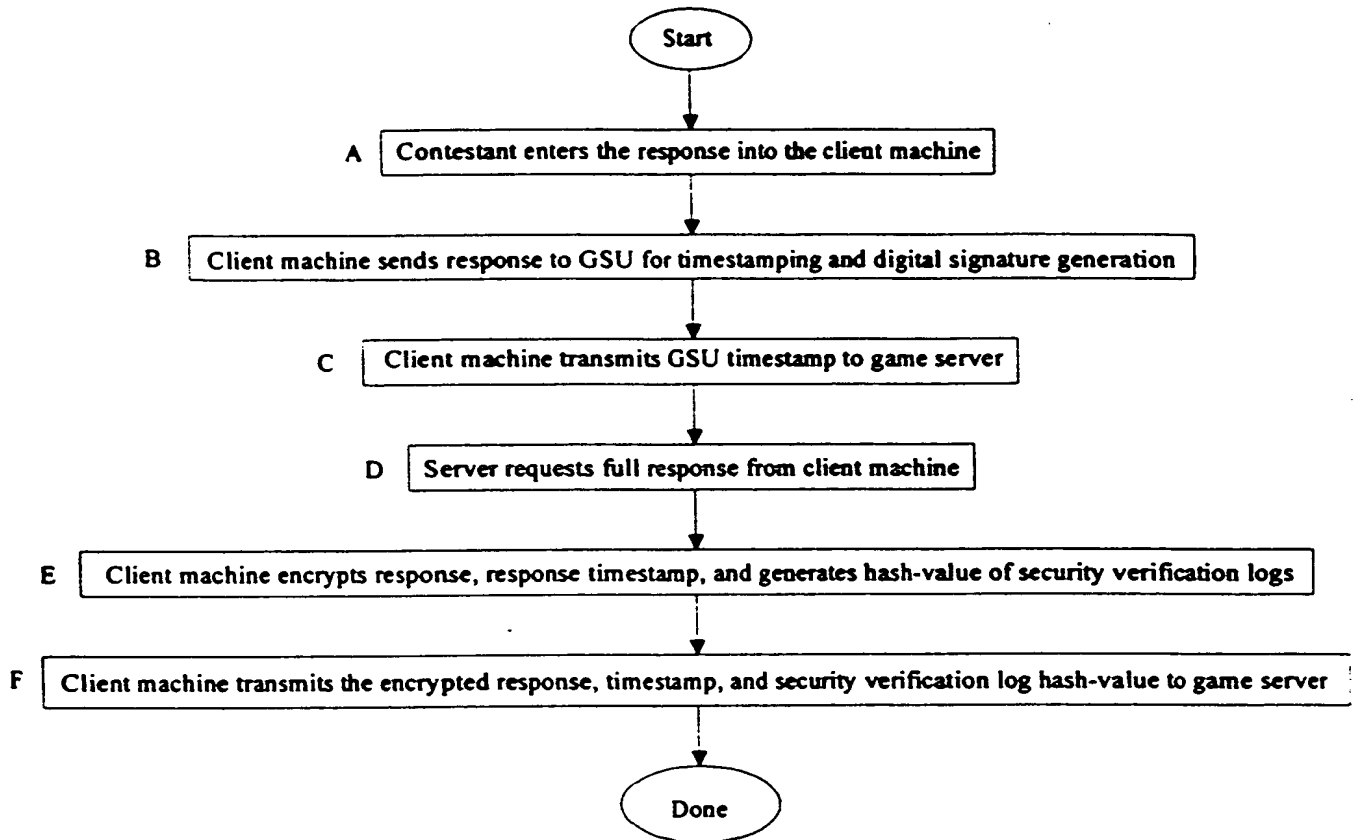


Figure 4E3



**Contestant submits timestamped response****(Client Machine With Basic GSU)****Figure 4F1**

### Contestant submits timestamped response

(Client Machine With Enhanced GSU)

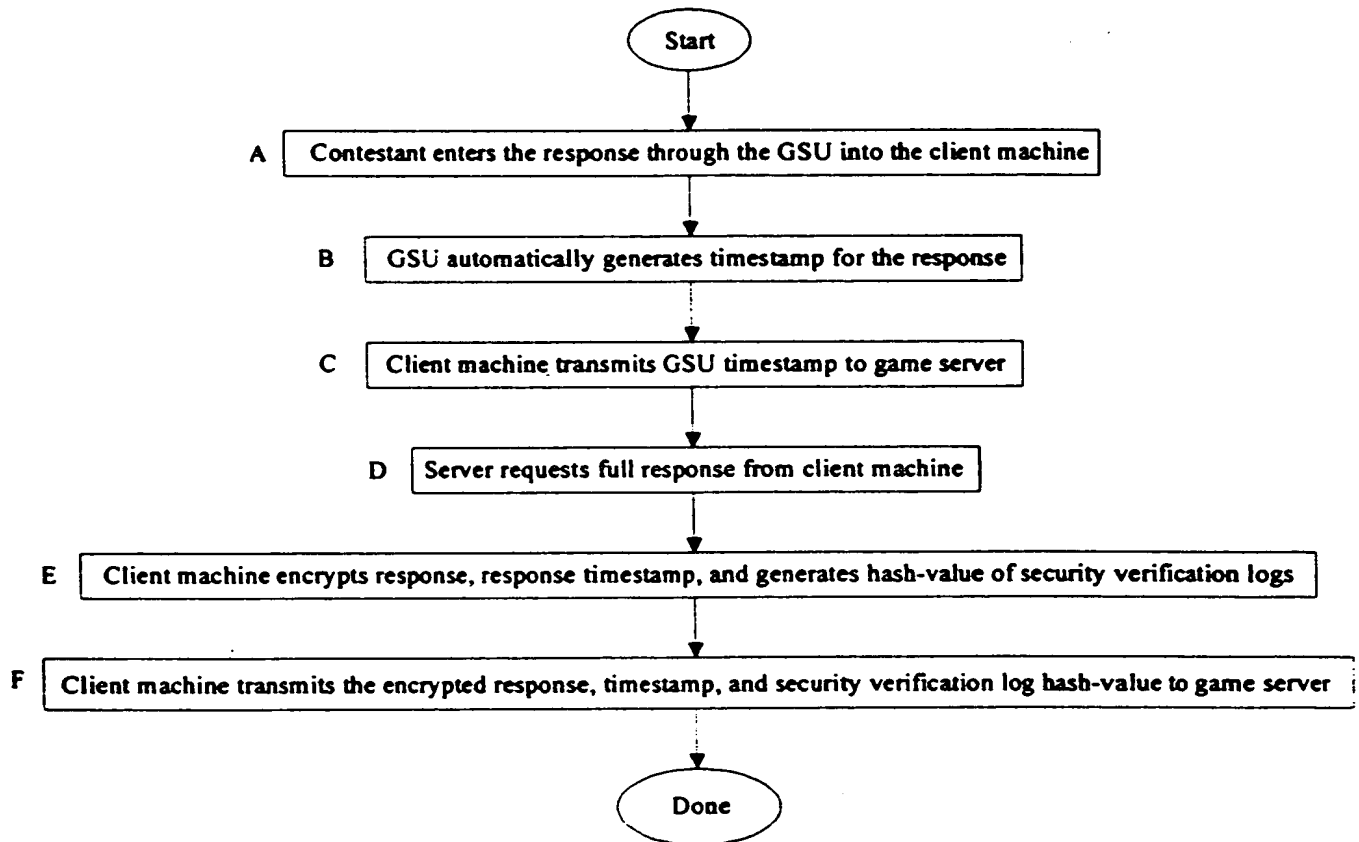


Figure 4F2

### Contestant submits timestamped response

(Client Machine Without GSU)

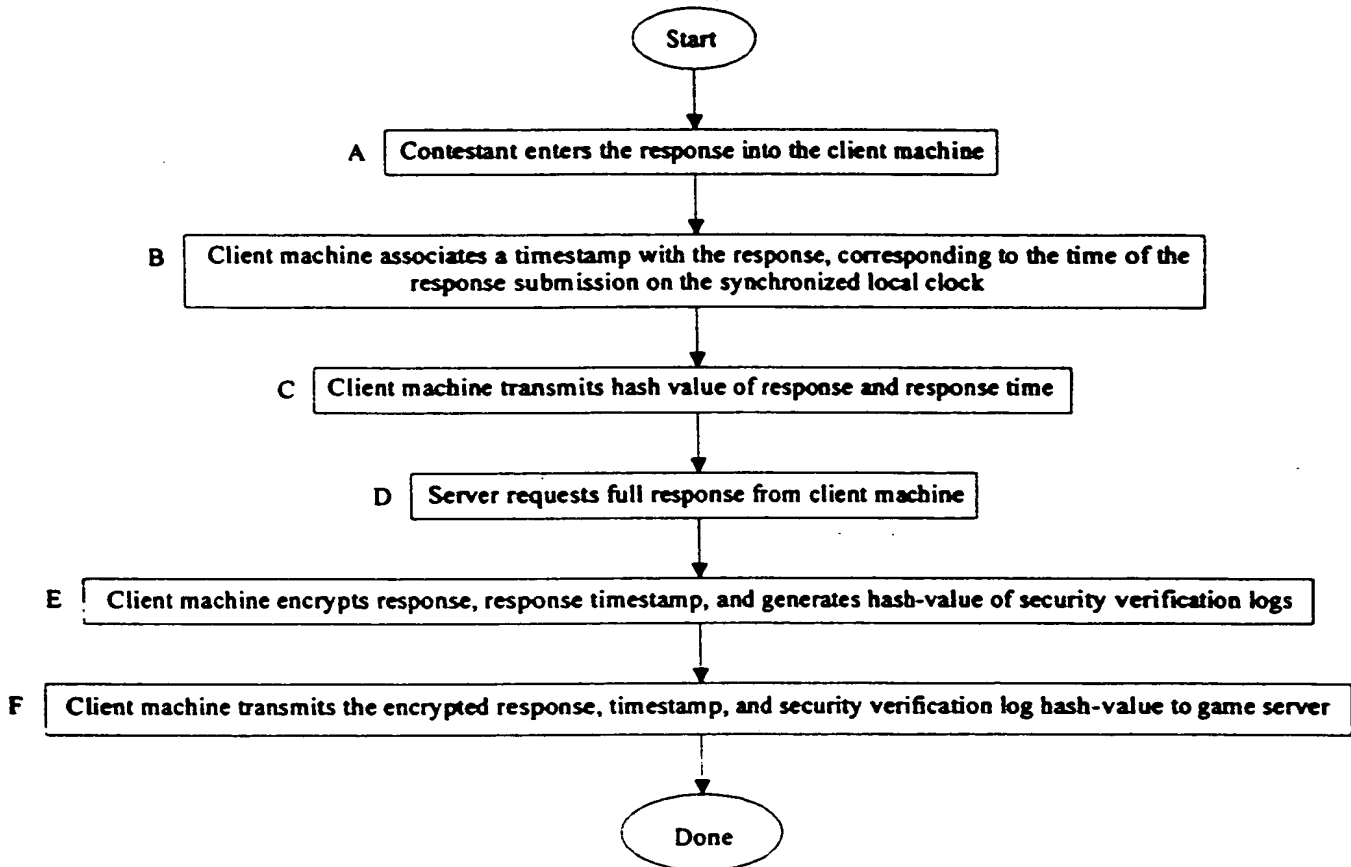


Figure 4F3

# Results Judged and Winners Determined

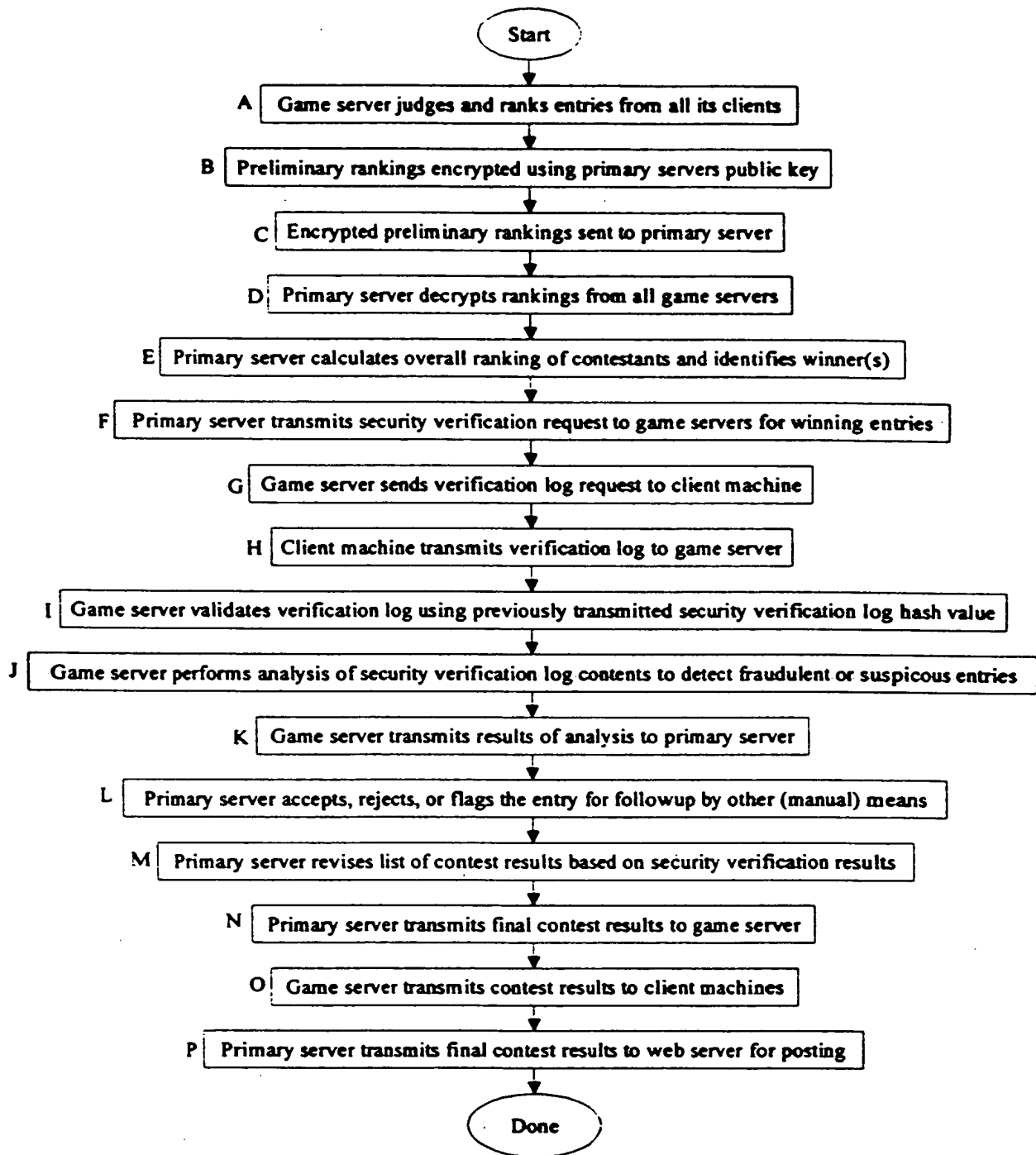


Figure 4G

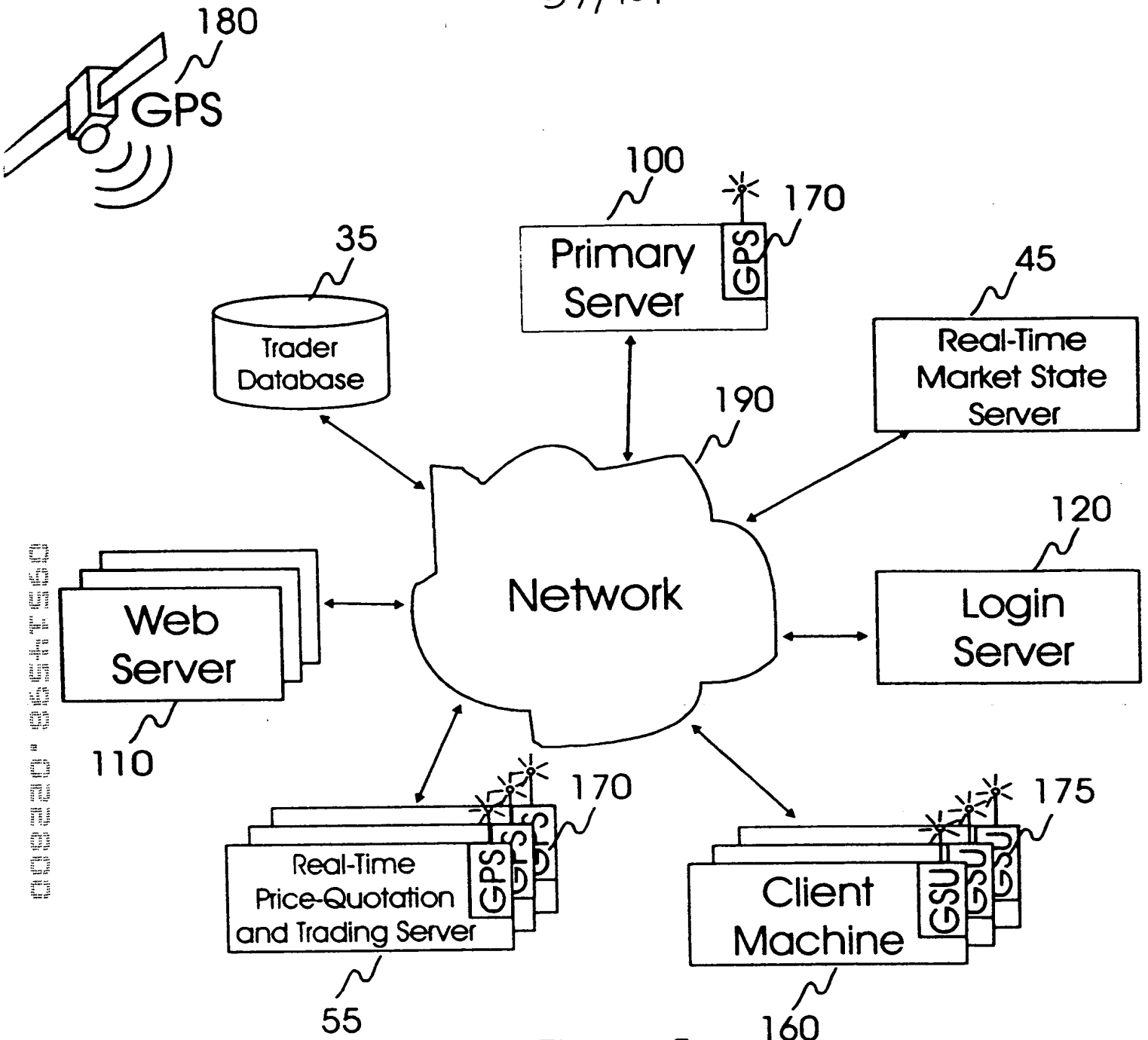


Figure 5

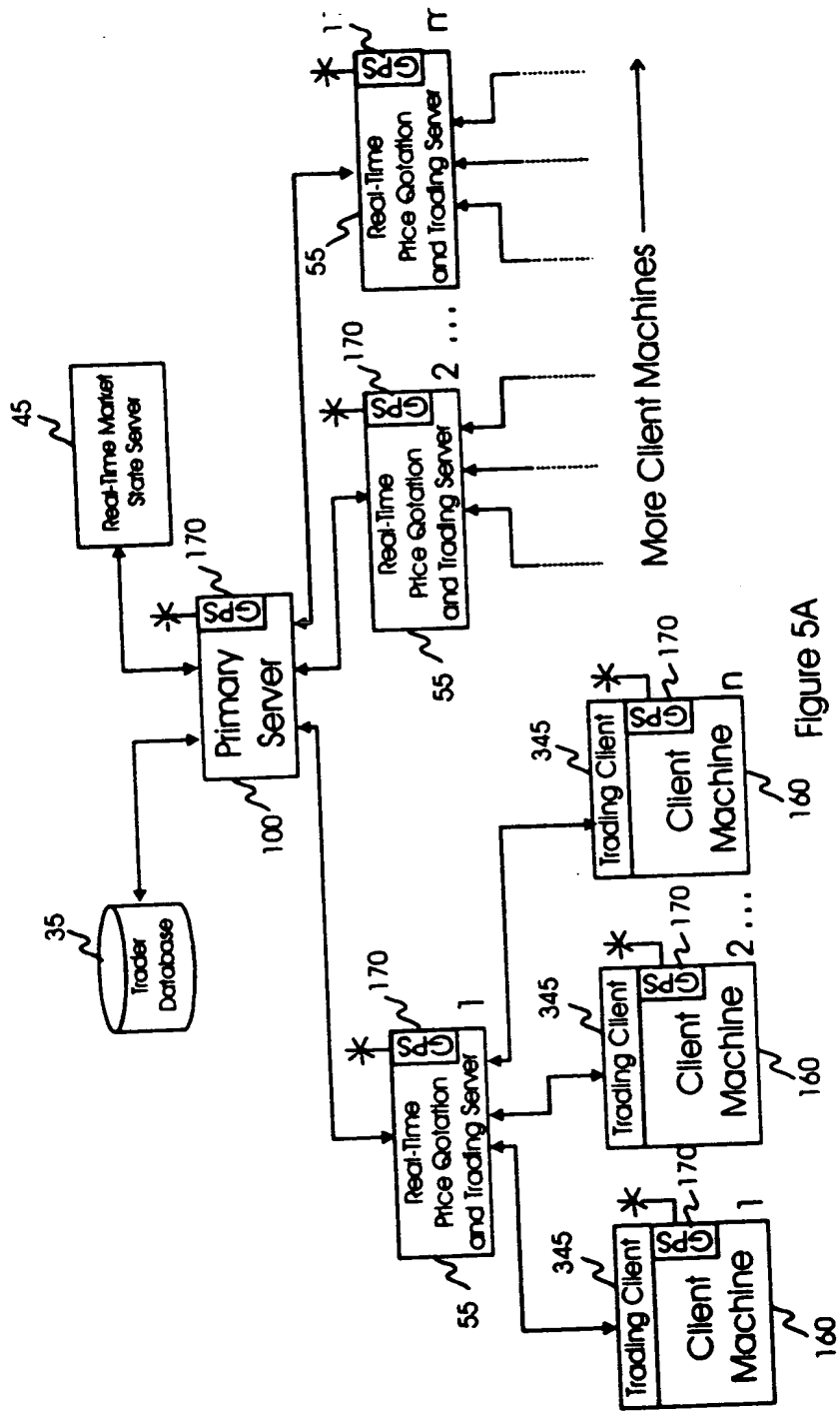


Figure 5A

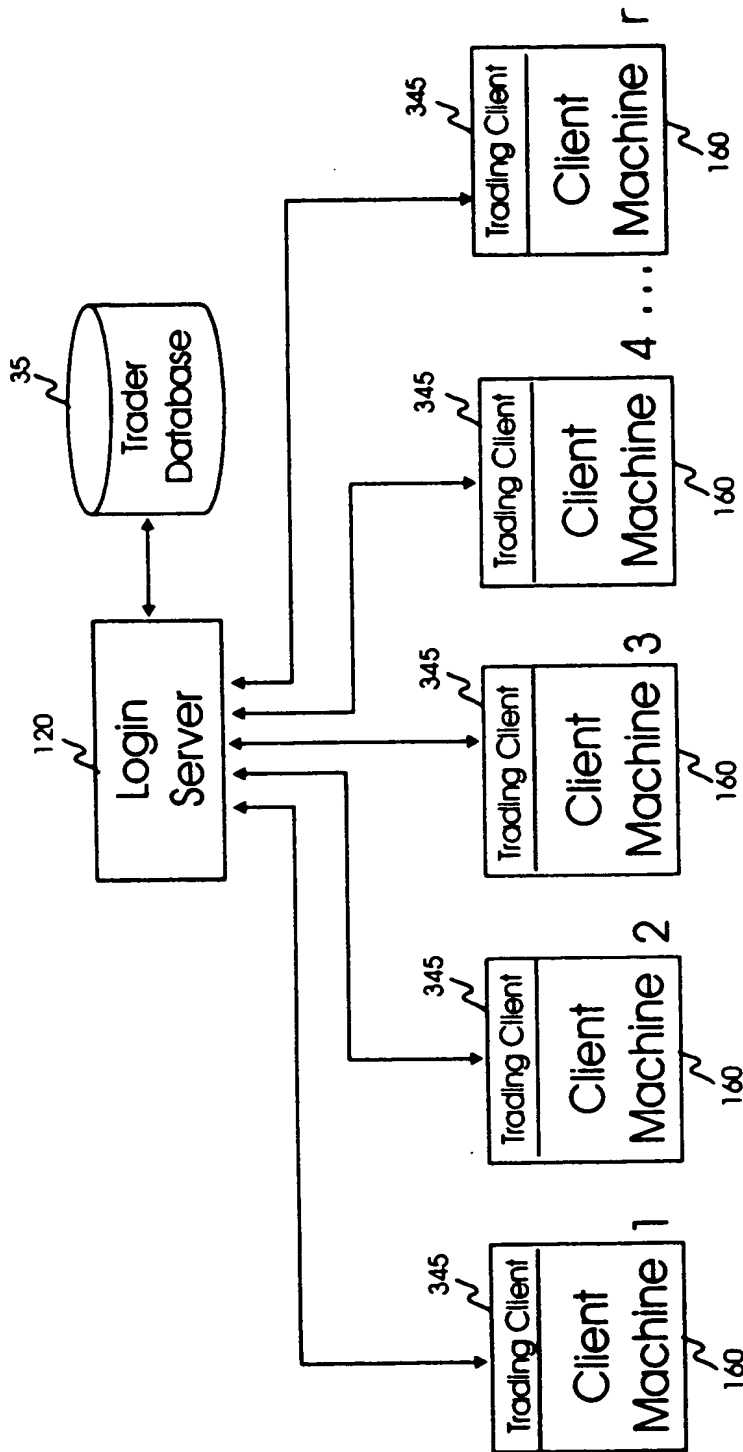


Figure 5B

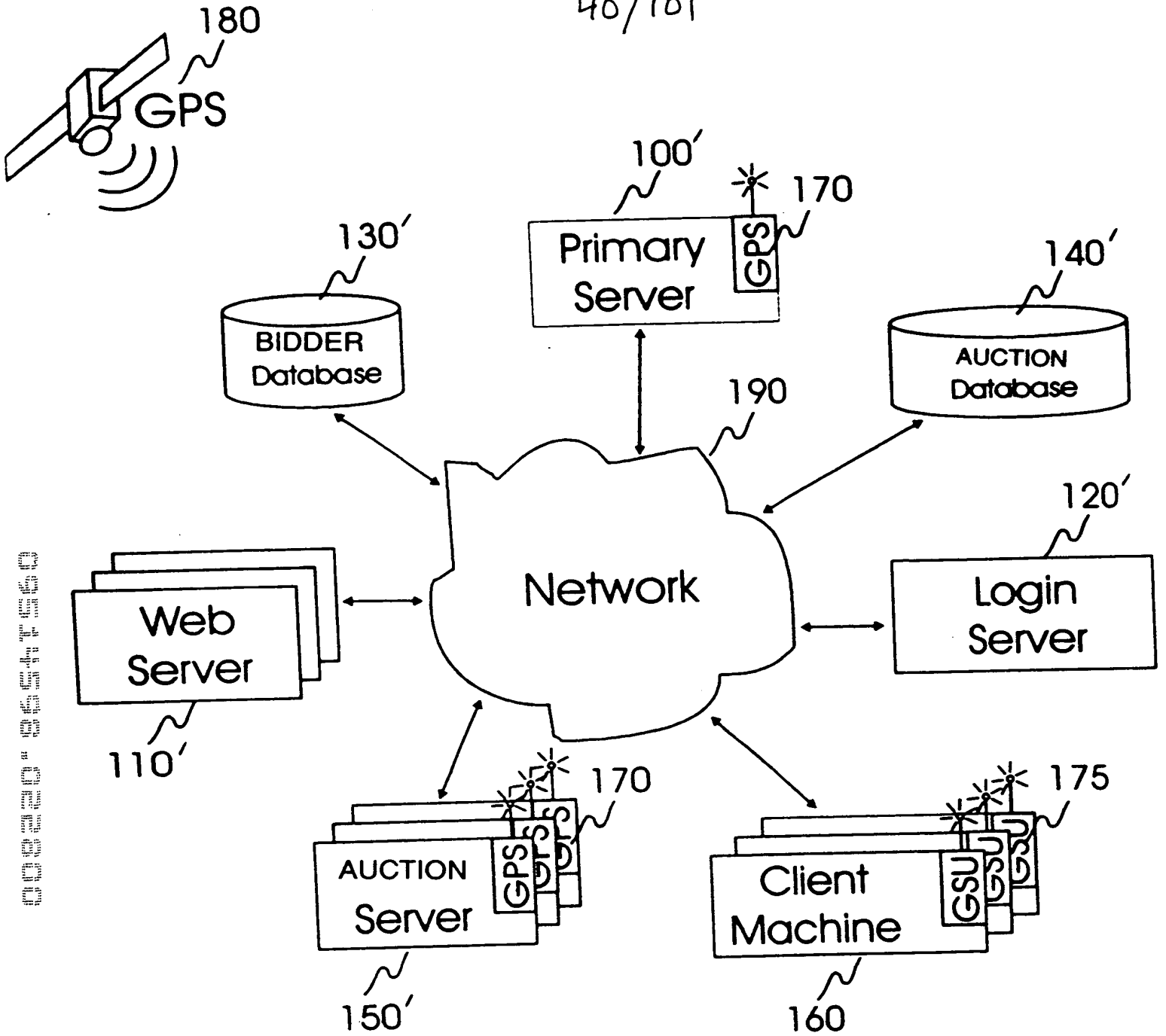


FIG. 6



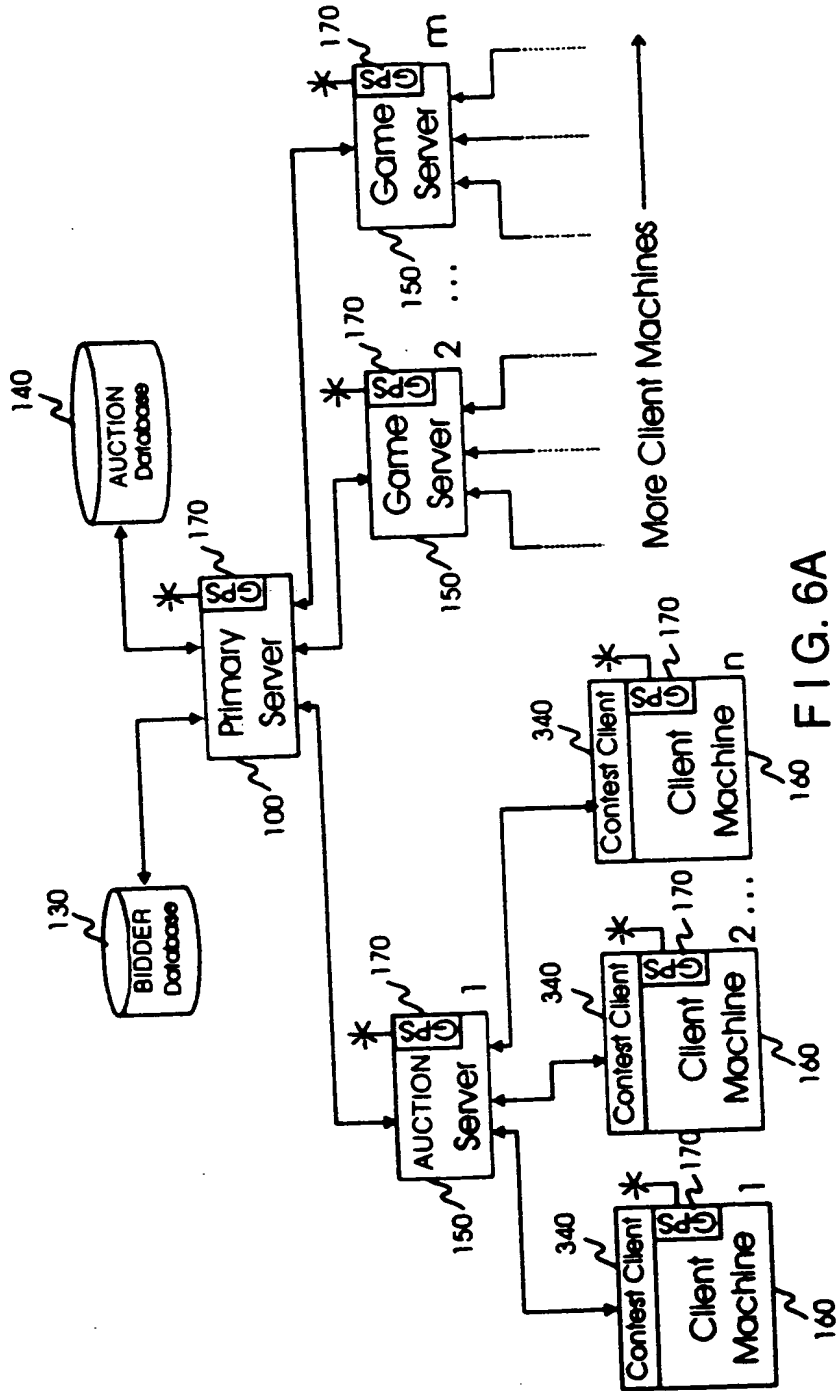


FIG. 6A

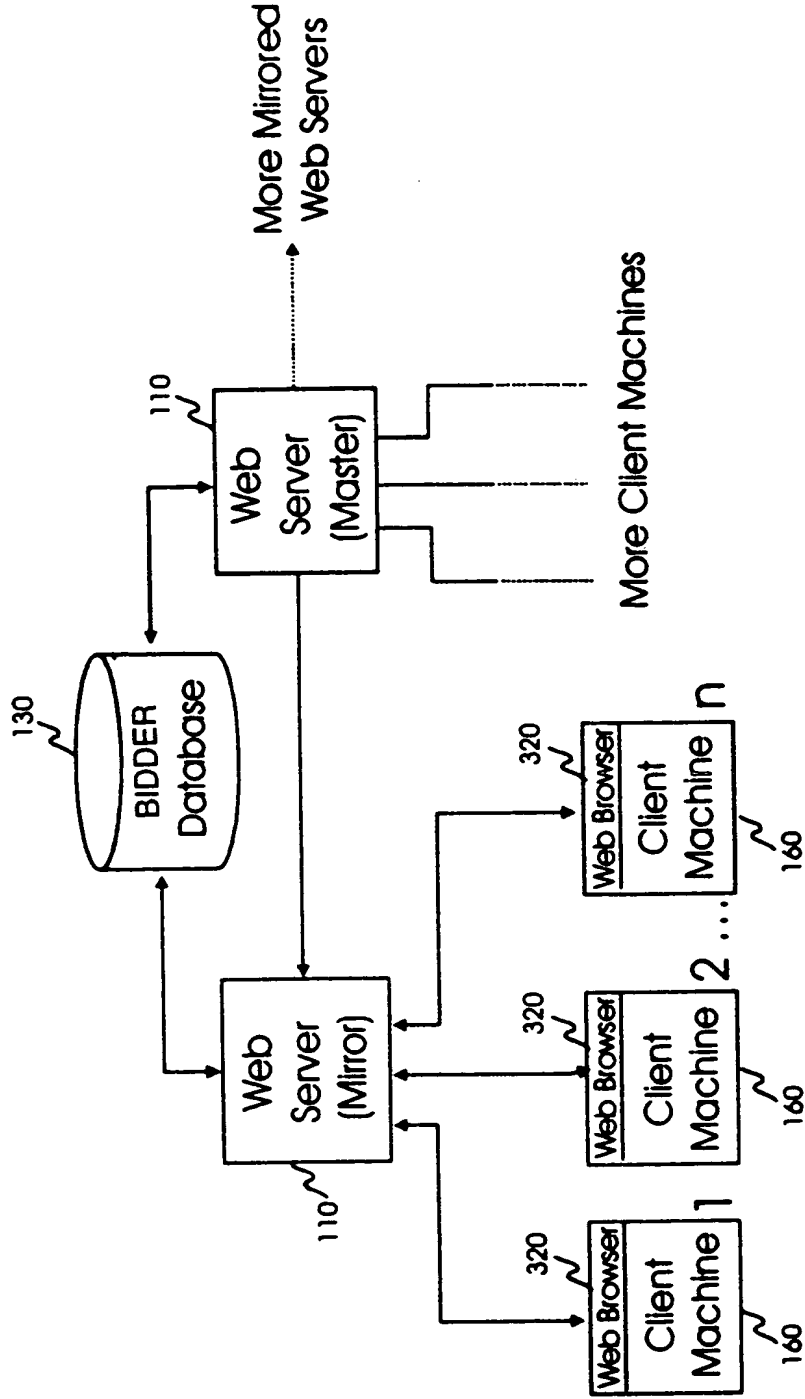


FIG. 6B

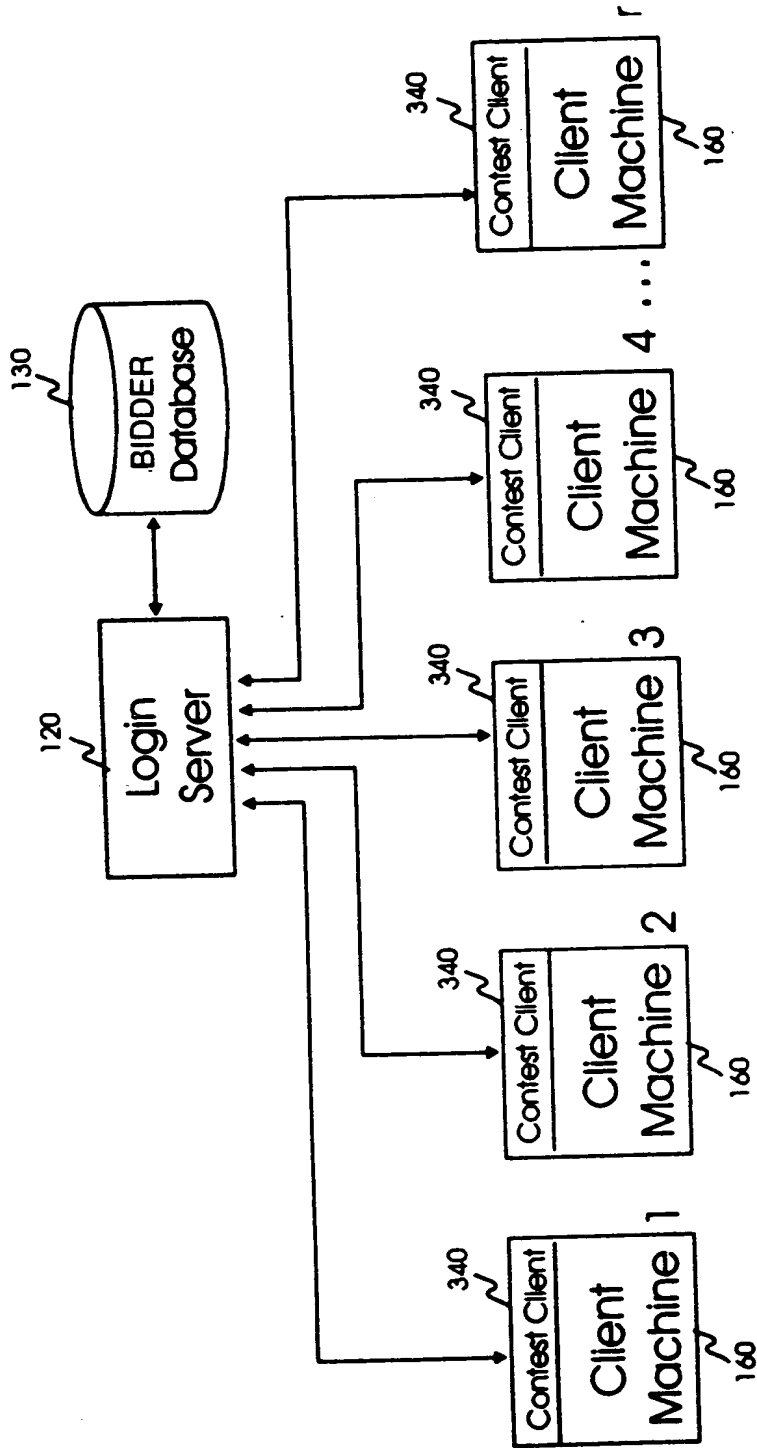


FIG. 6C

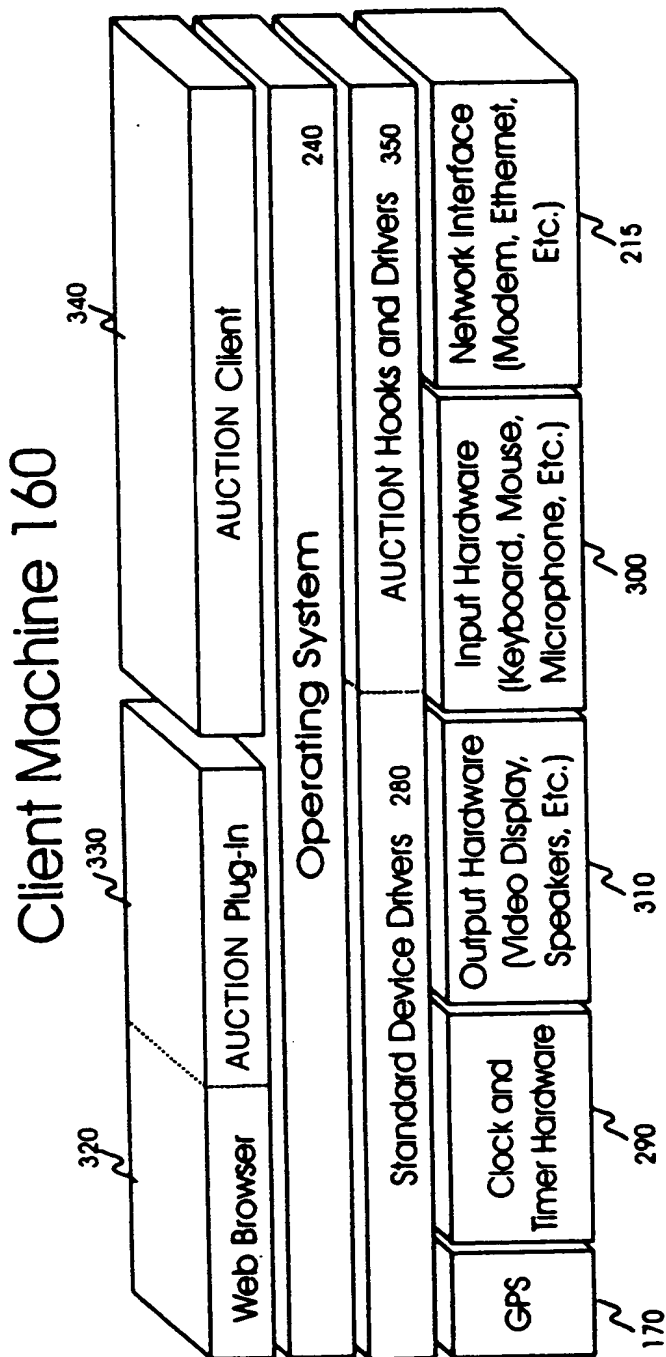


FIG. 6D

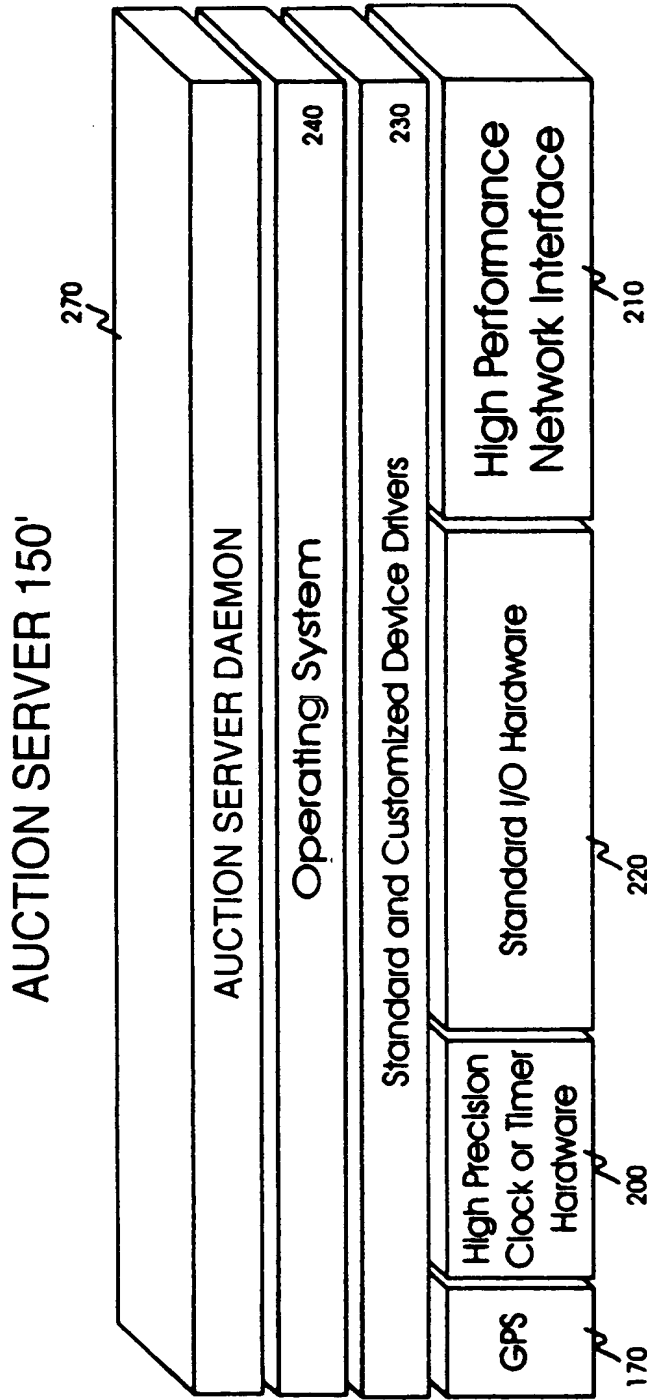


FIG. 6E

# Web Server 110

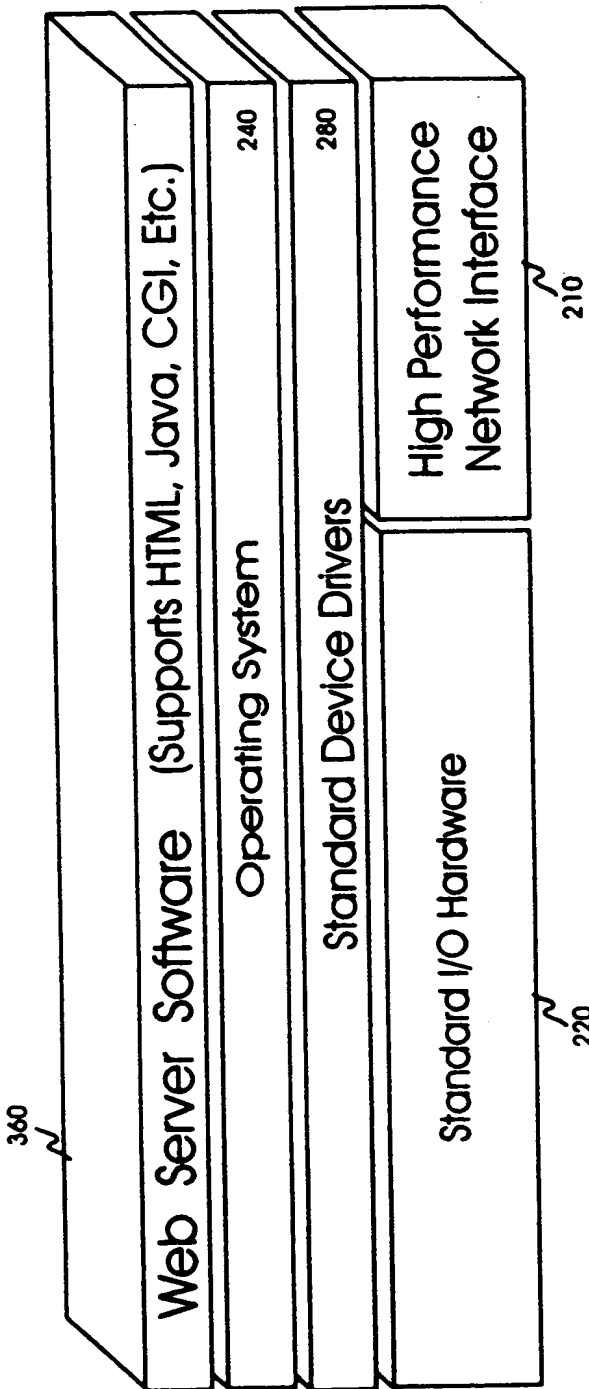
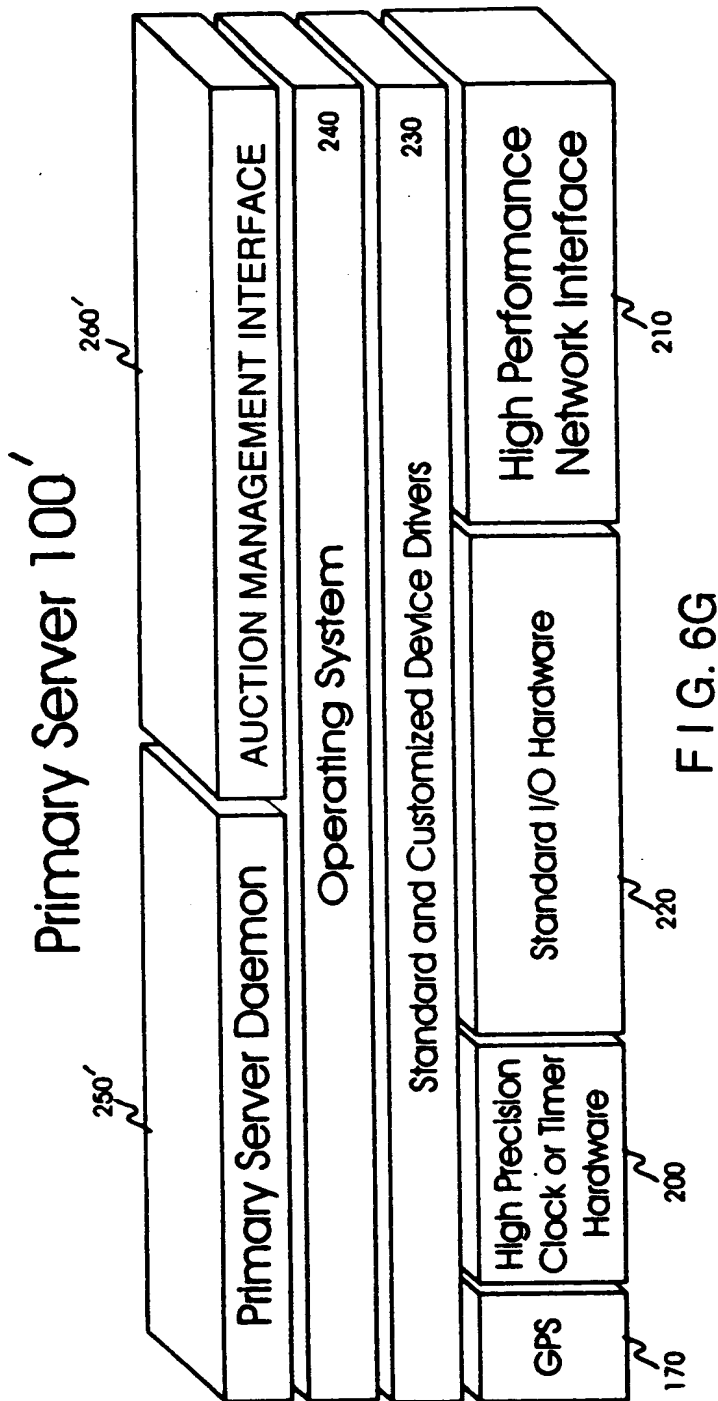
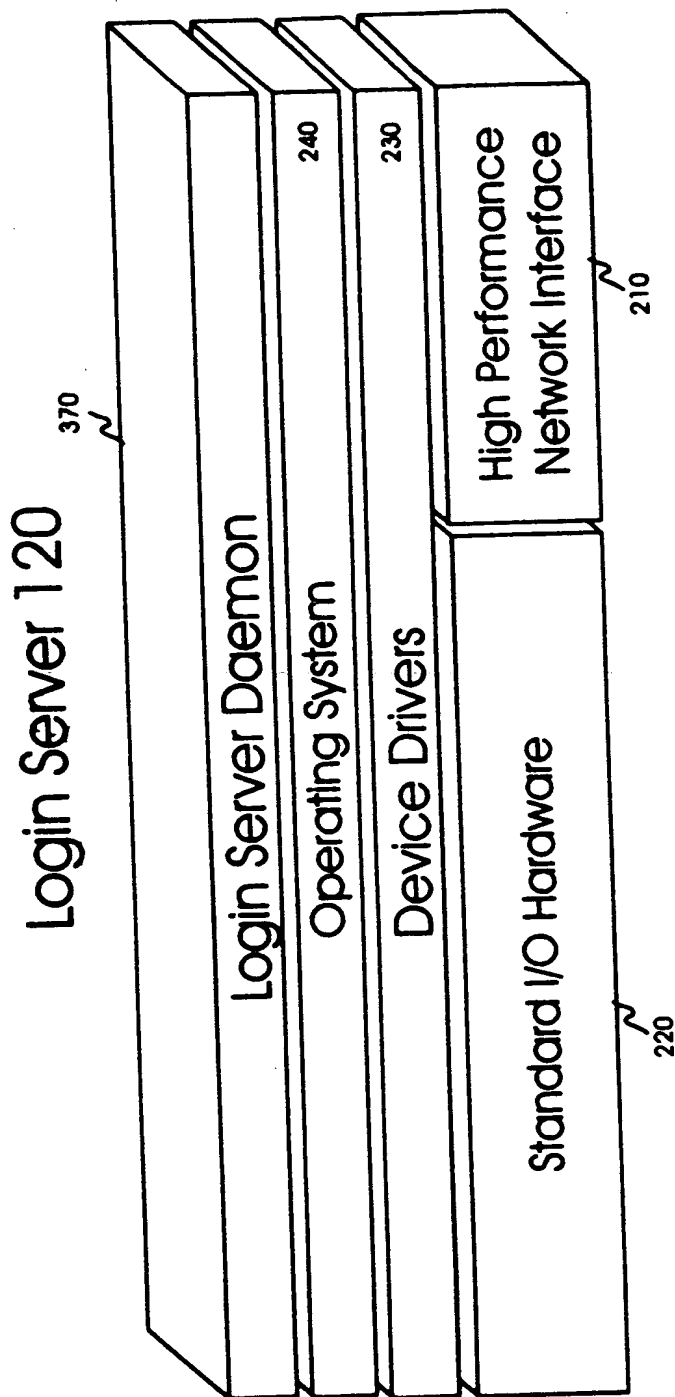


FIG. 6F







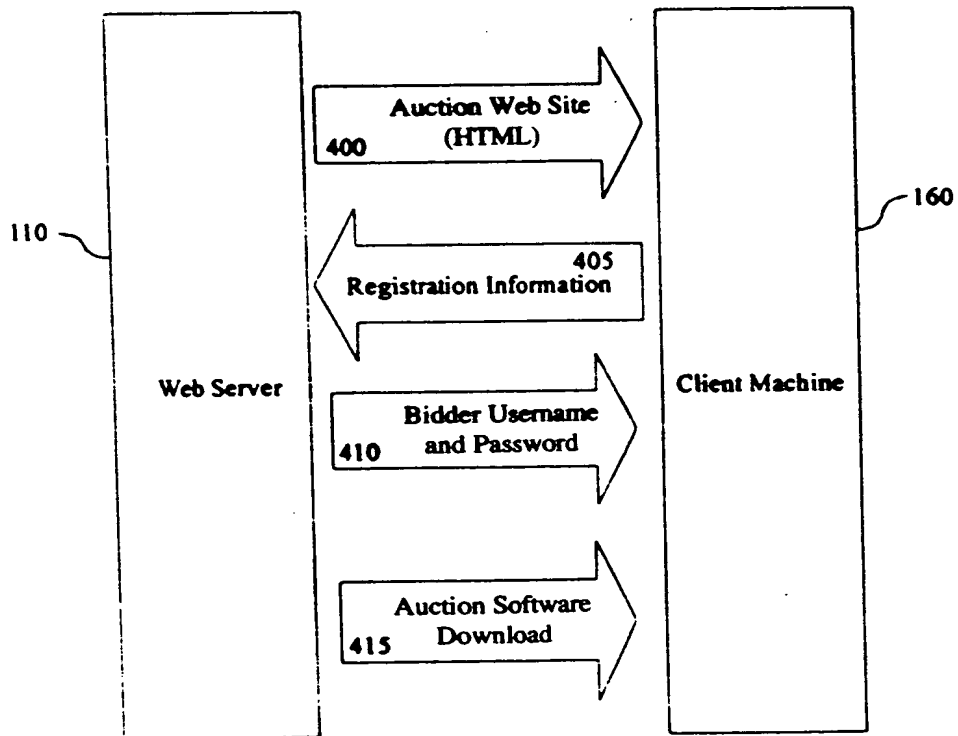


FIG. 7A

50/101

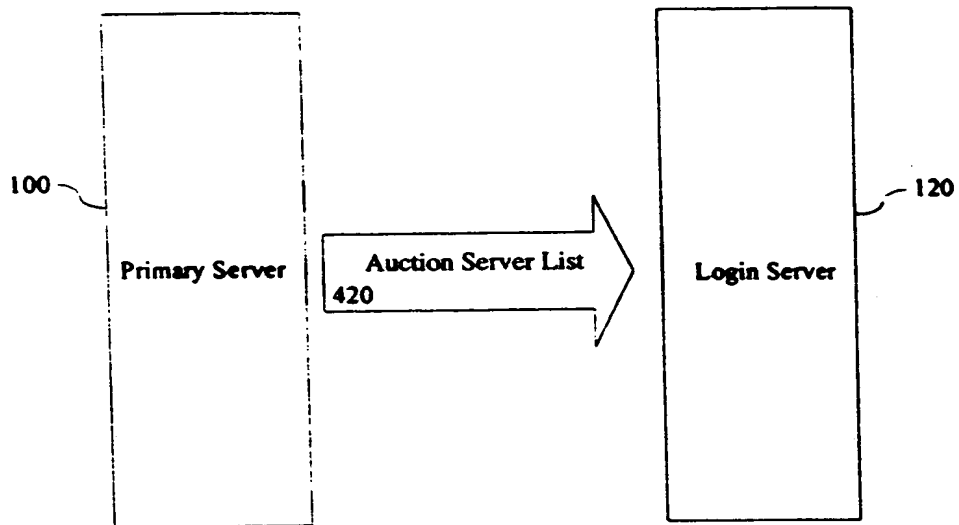


FIG. 7B

51/101

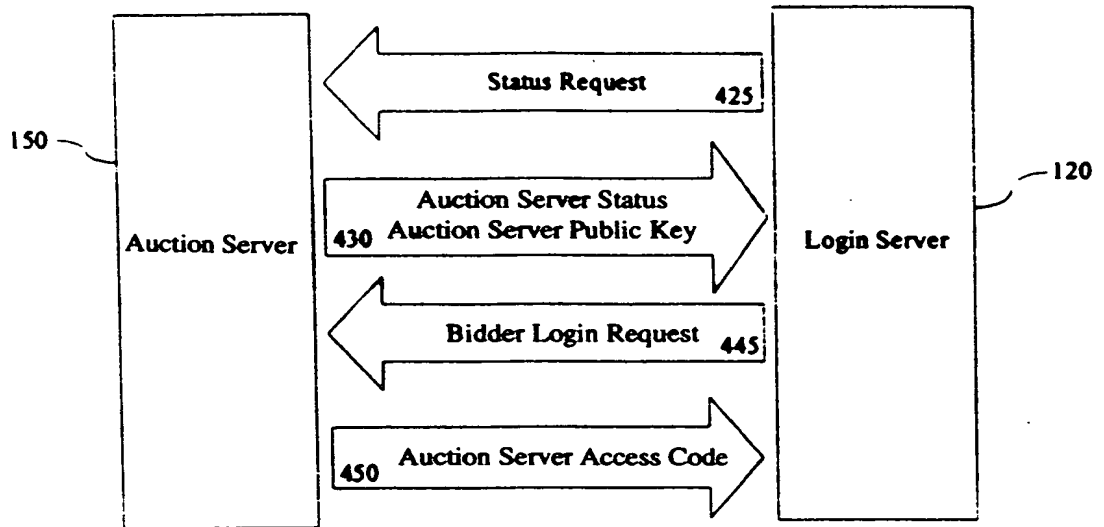


FIG. 7C

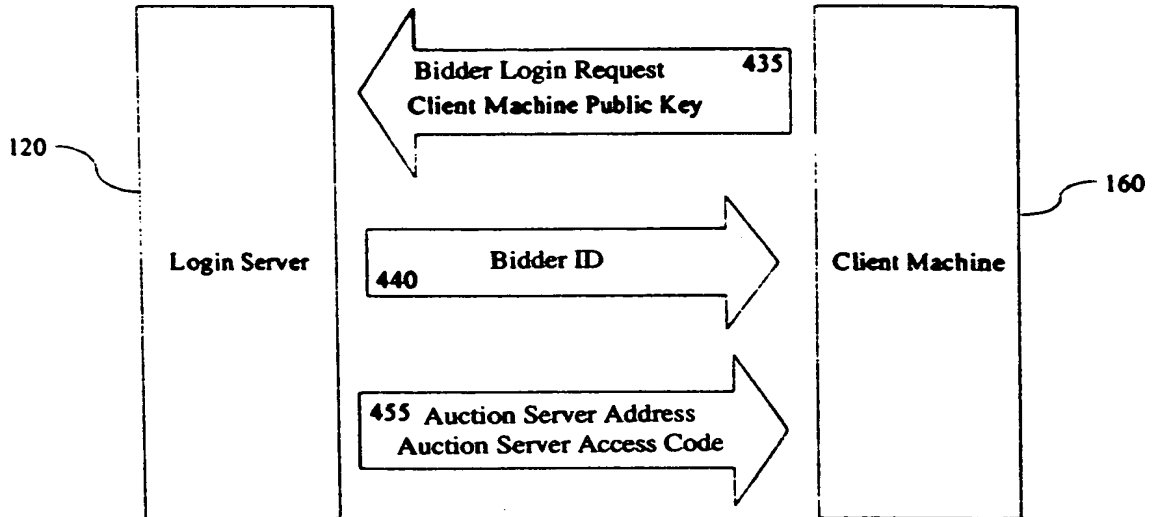


FIG. 7D

53/101

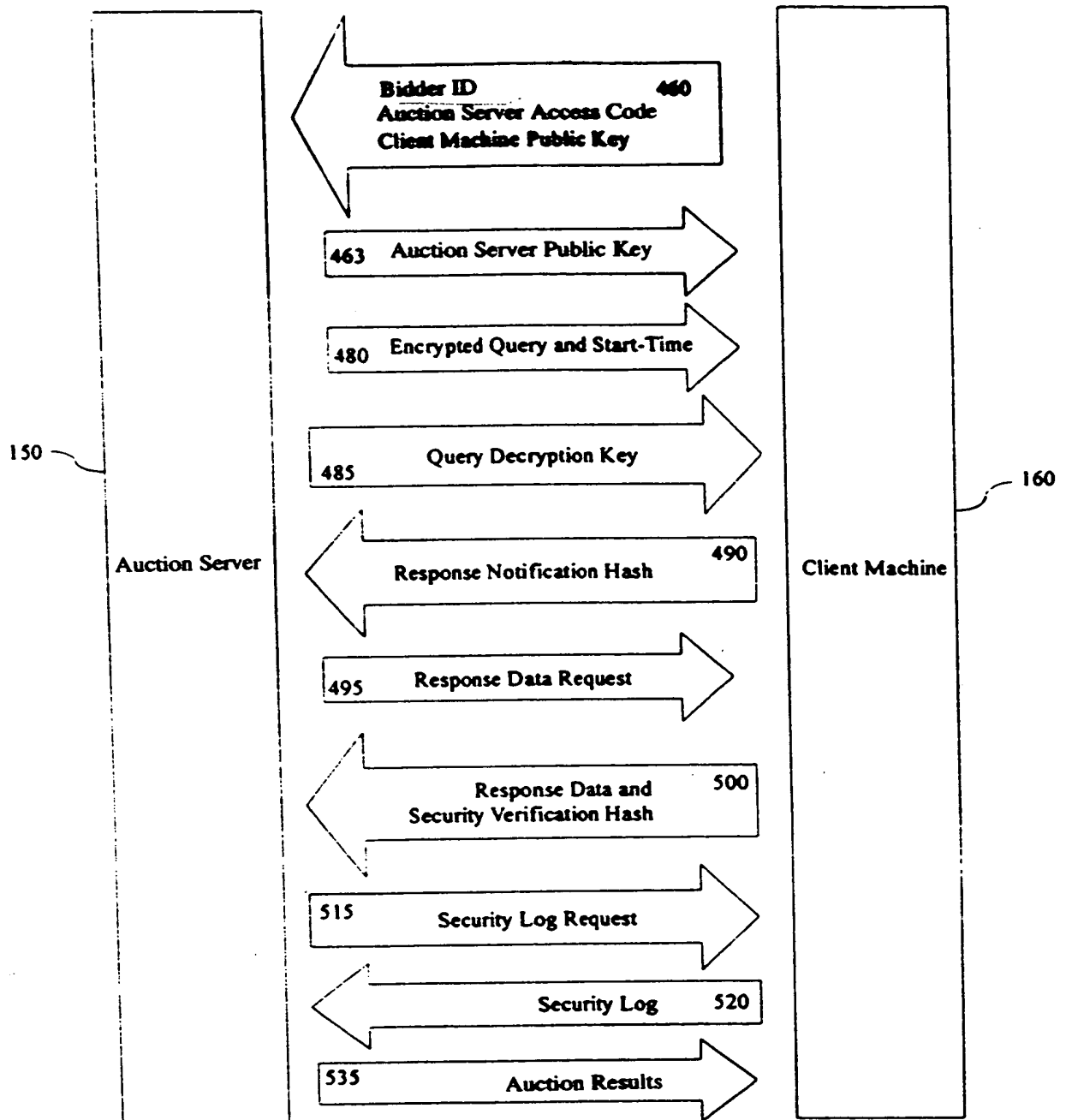


FIG. 7E

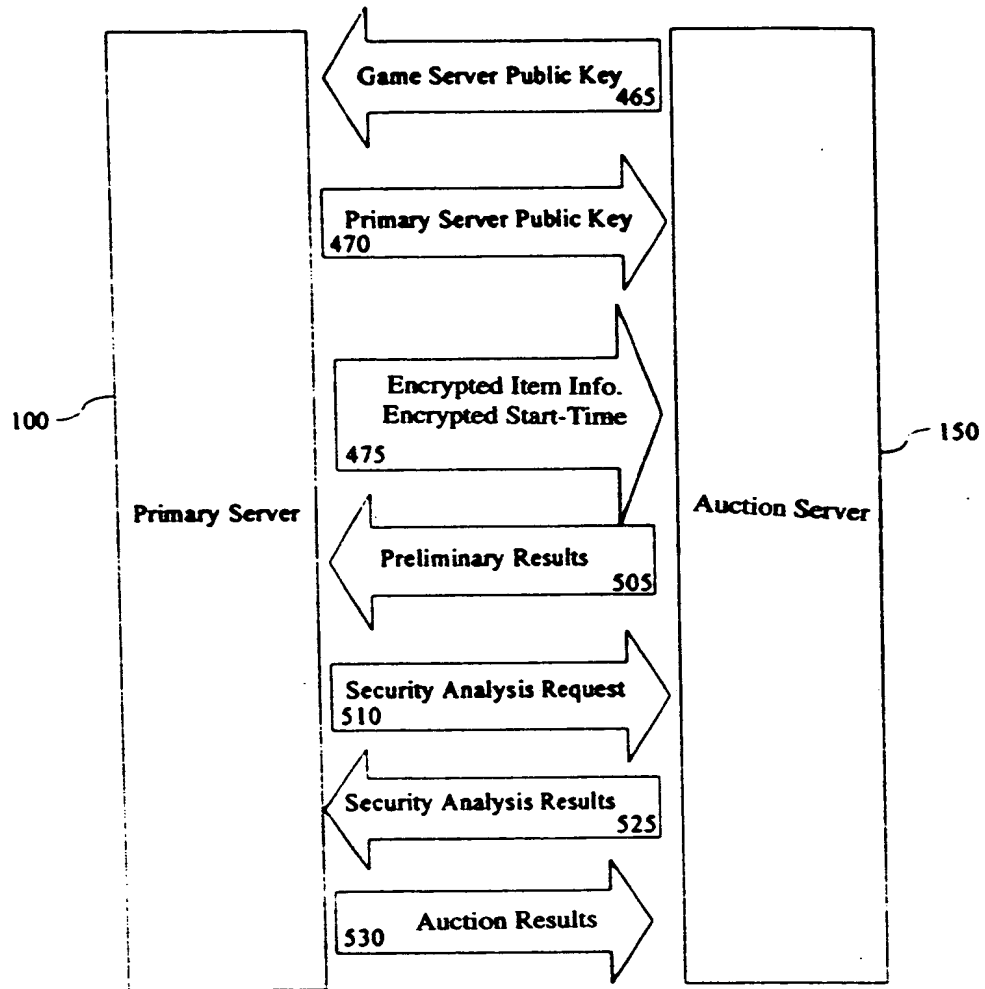


FIG. 7F

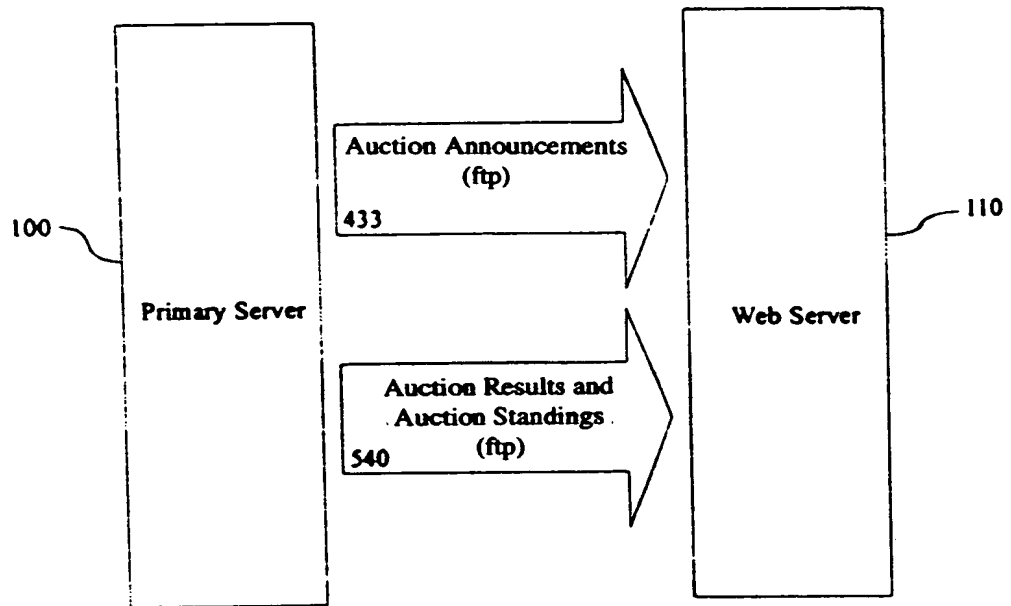


FIG. 7G

**BID HISTORY**  
**AUCTION INFORMATION DATA FIELDS**

ITEM NUMBER
DESCRIPTION
CATEGORY
MINIMUM SALE AMOUNT
BID INCREMENTS
START TIME
END TIME (IF APPLICABLE)
HIGHEST BID
ALL BID INFORMATION
OWNER
ADDRESS
EMAIL
PHONE
SALE HISTORY
BUYER COMMENTS

**FIG. 8B**

**LOGIN INFORMATION DATA FIELDS**

USERNAME
PASSWORD
NAME
ADDRESS
EMAIL
CREDIT CARDS
CREDIT INFORMATION/RATING
UNIQUE IDENTIFICATION
NETWORK LATENCY HISTORY

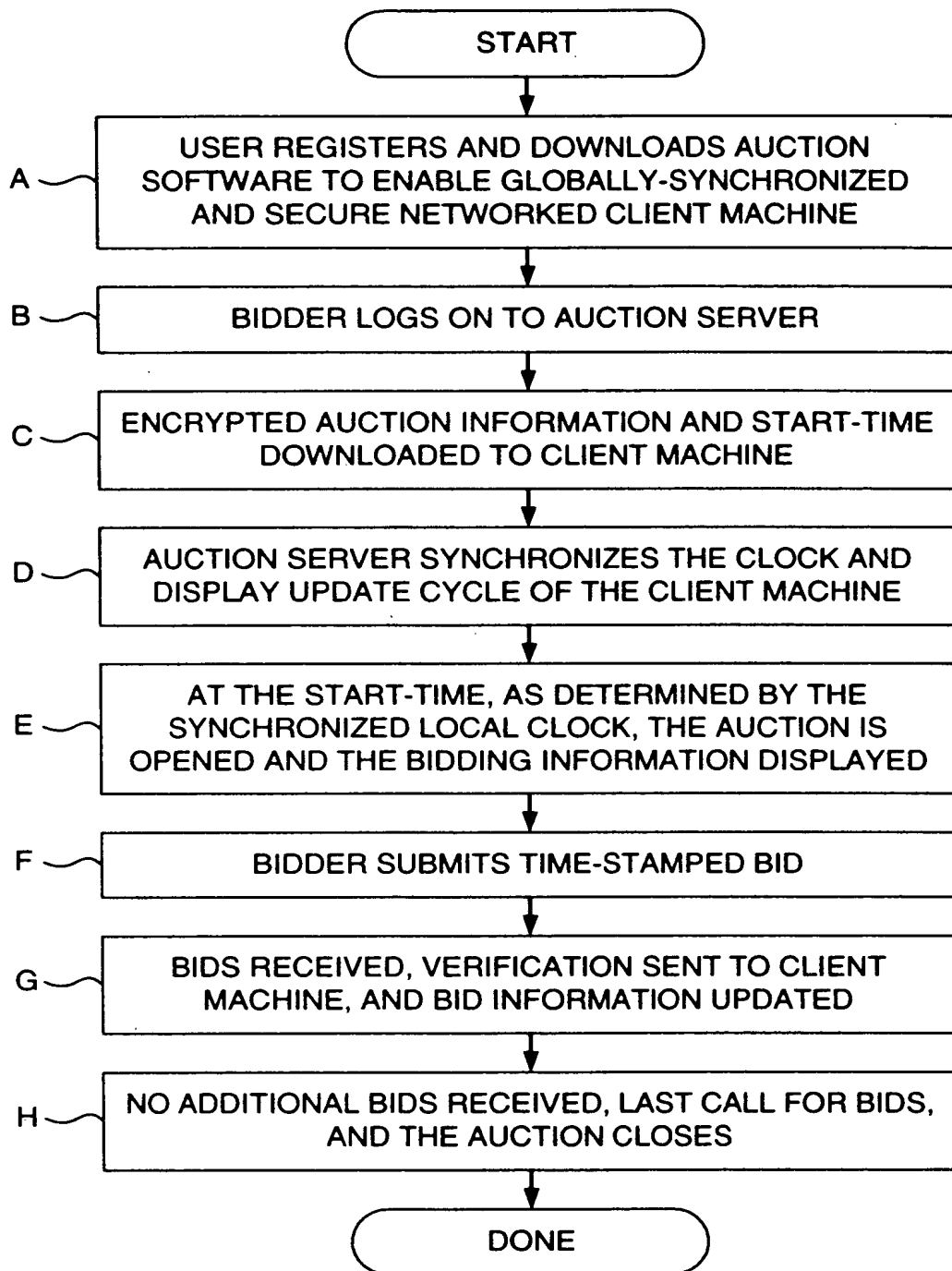
**FIG. 8A**

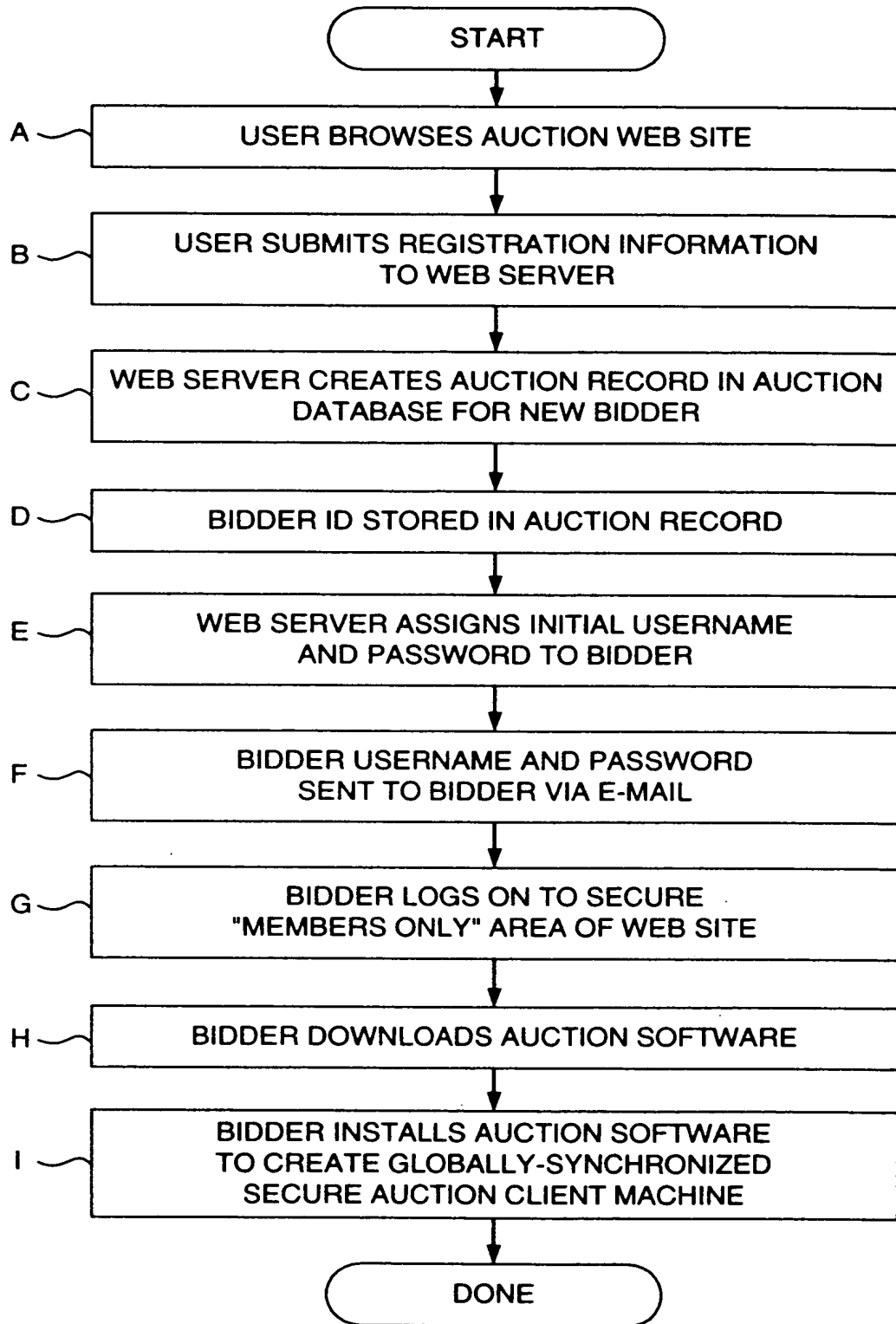
**BID INFORMATION DATA FIELDS**

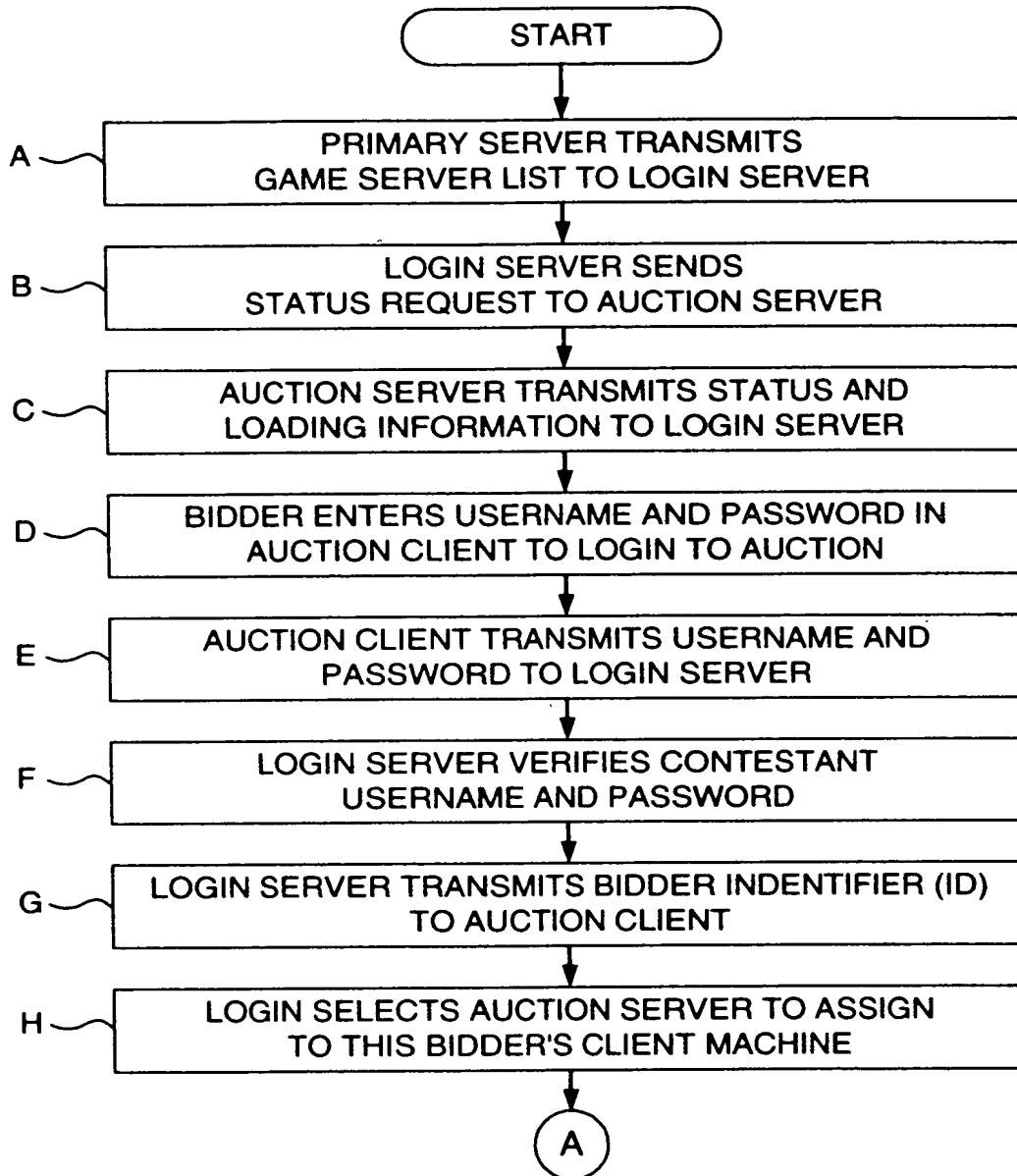
USERNAME
UNIQUE IDENTIFICATION
SUBMISSION-TIME TIME STAMP
RECEIPT-TIME TIME STAMP
BID AMOUNT
VERIFICATION KEY

**FIG. 8C**



**THE AUCTION PROCESS****FIG. 9**

**USER REGISTERS AND DOWNLOADS AUCTION SOFTWARE****FIG. 9A**

**BIDDER LOGS ON TO AUCTION SERVER****FIG. 9B1**

60/101

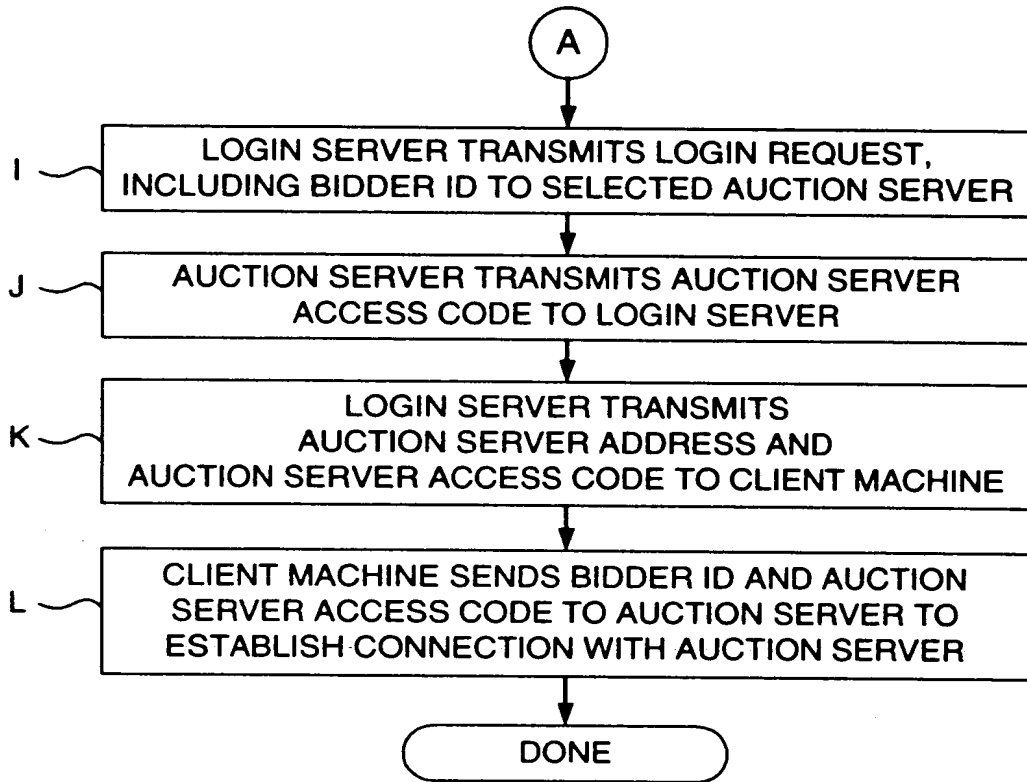


FIG. 9B2

61/101

**ENCRYPTED AUCTION INFORMATION AND START-TIME  
DOWNLOADED TO CLIENT MACHINE**

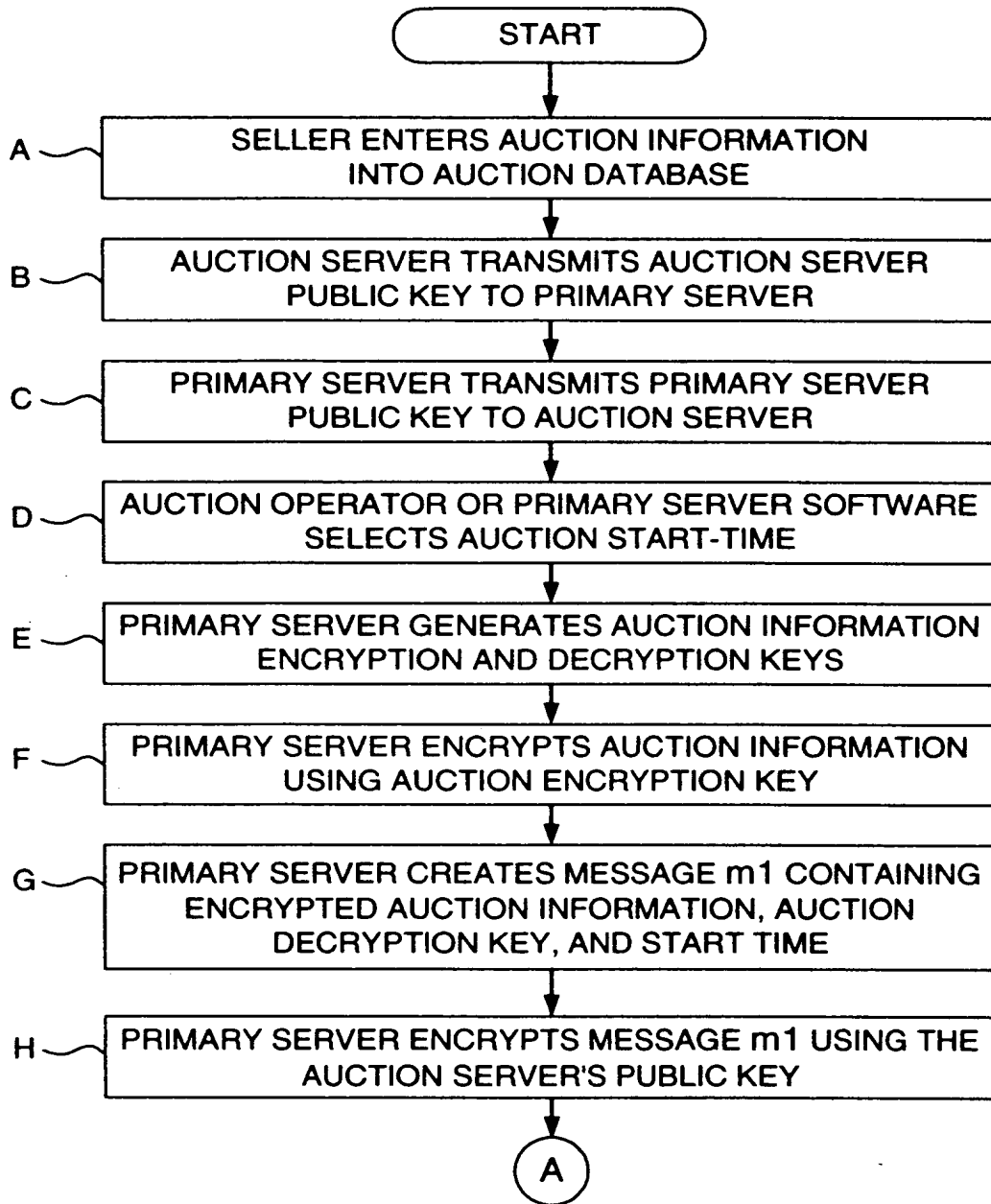


FIG. 9C1

62/101

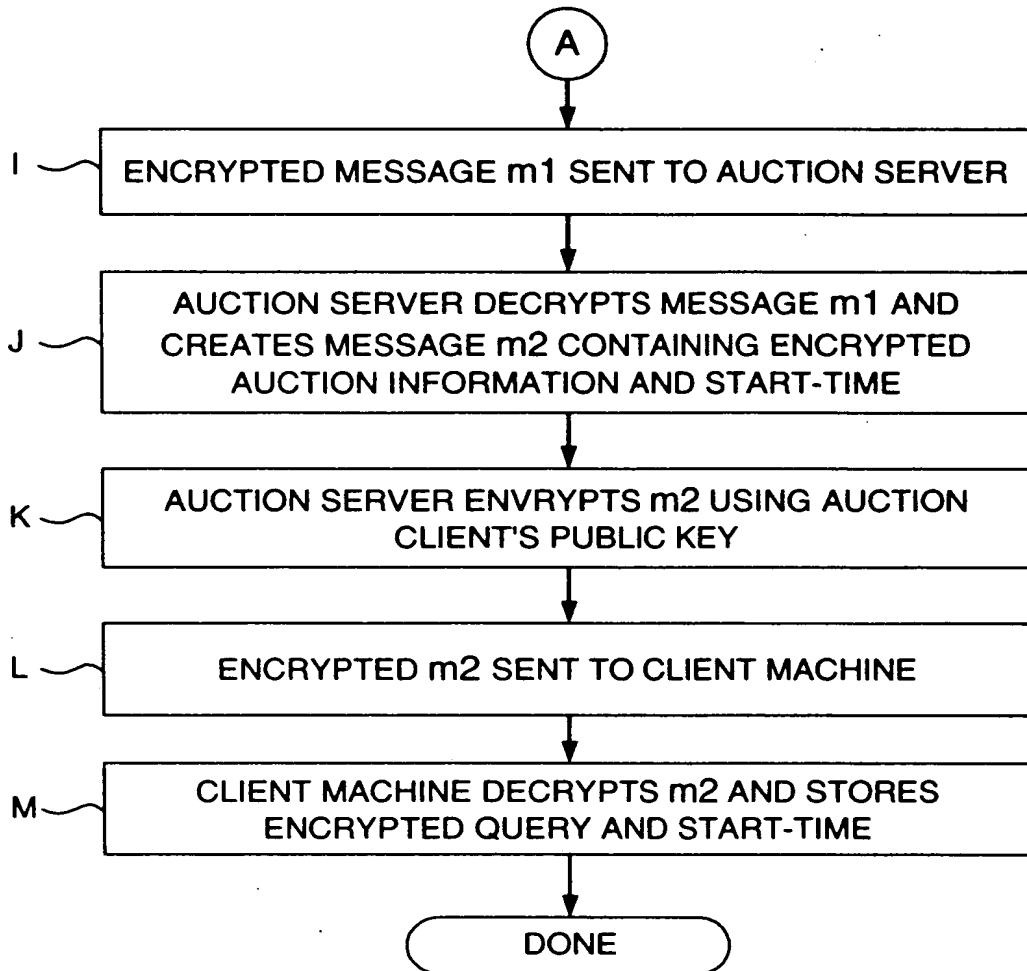
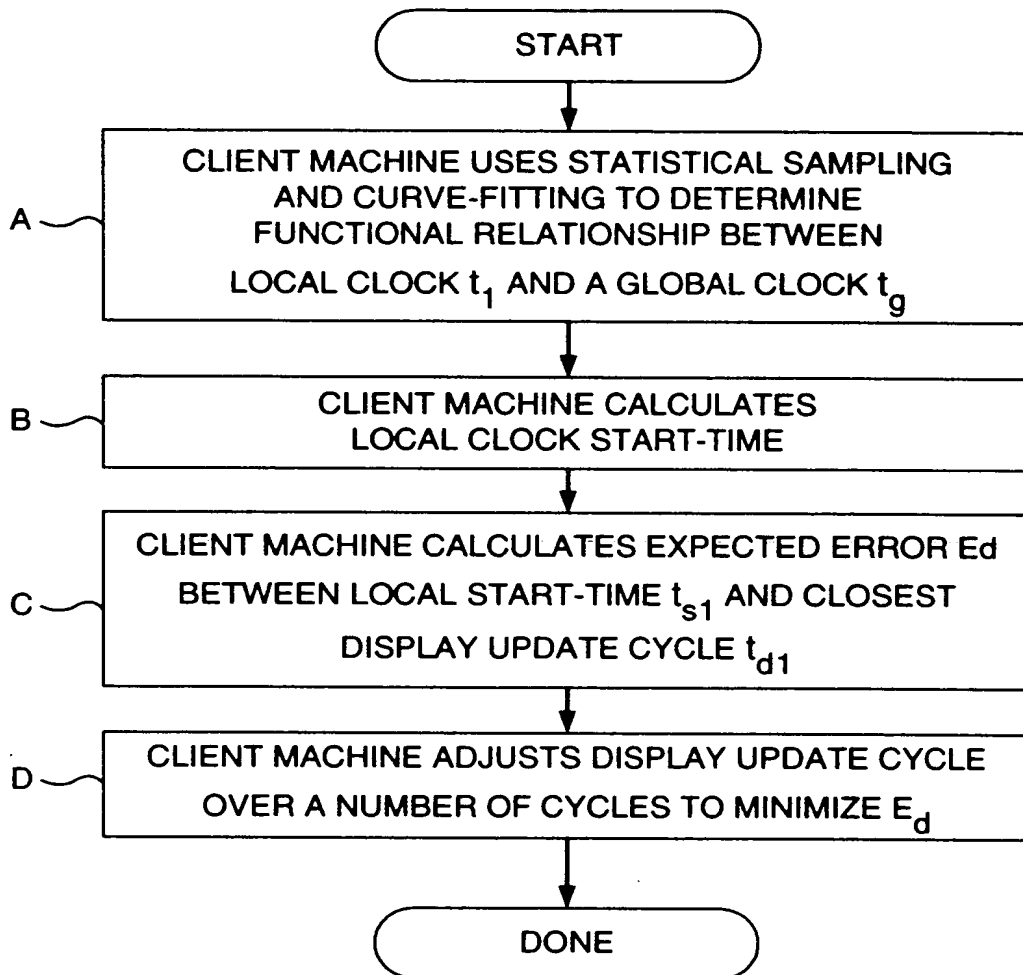


FIG. 9C2

**AUCTION SERVER SYNCHRONIZES THE CLOCK AND  
DISPLAY UPDATE CYCLE OF THE CLIENT MACHINE**



**FIG. 9D**

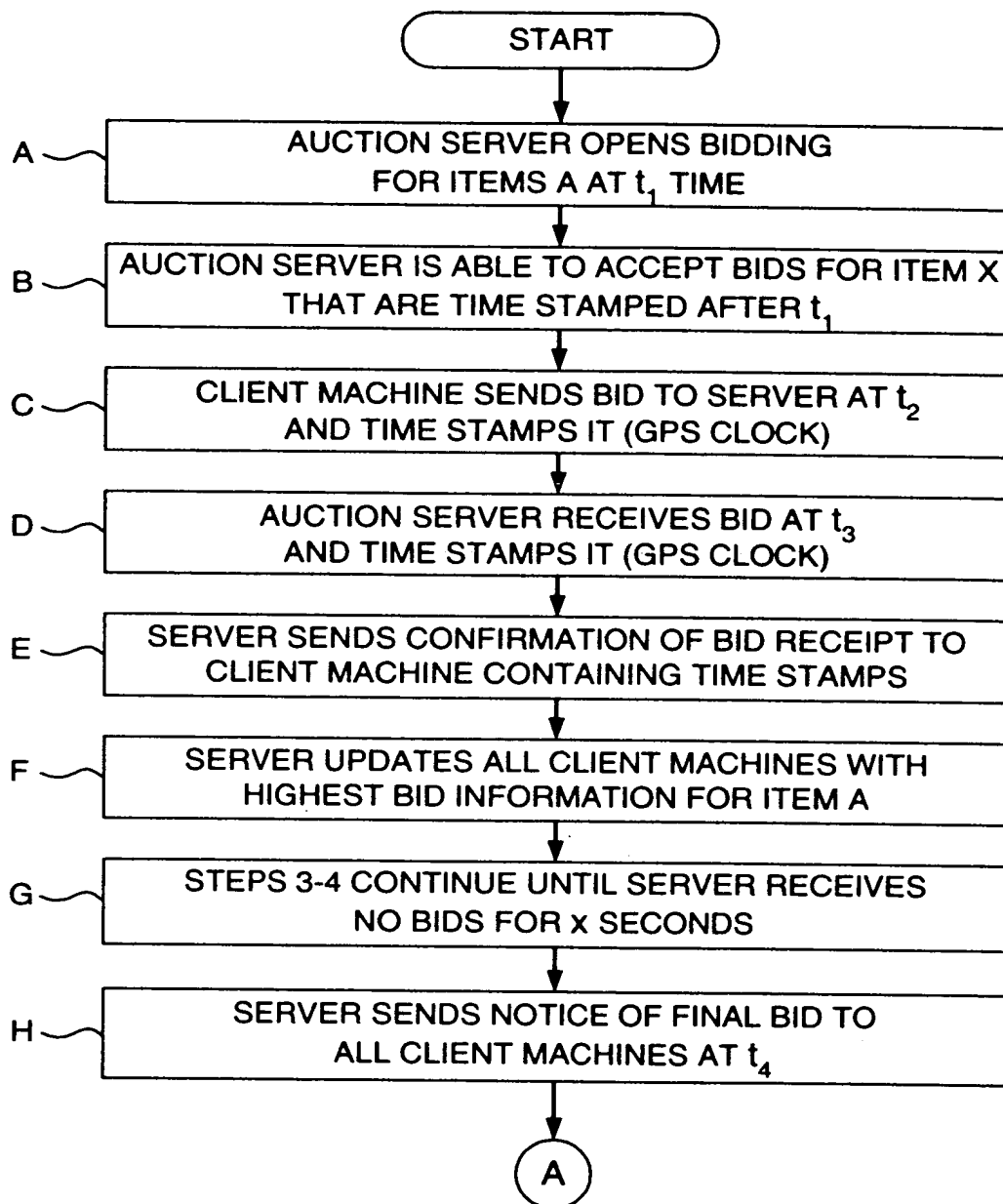
**HIGH LEVEL BIDDING PROCESS**

FIG. 9E1



65/101

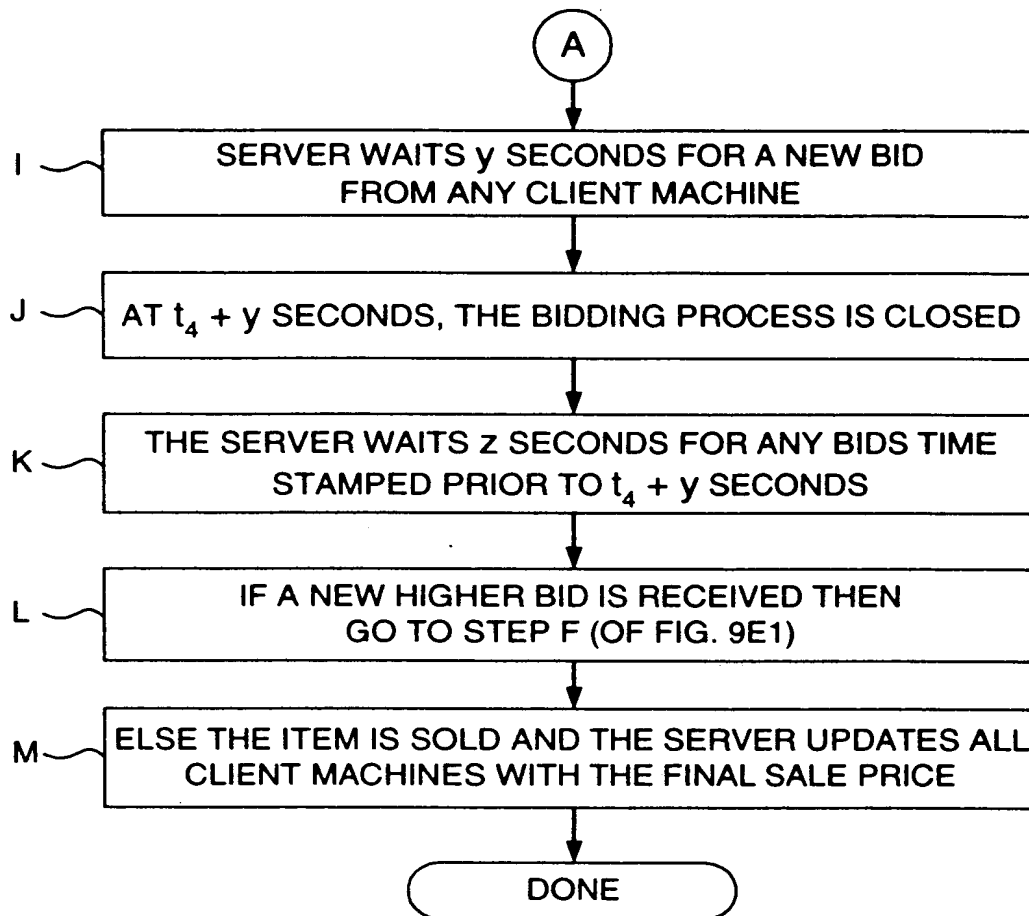


FIG. 9E2

66/101

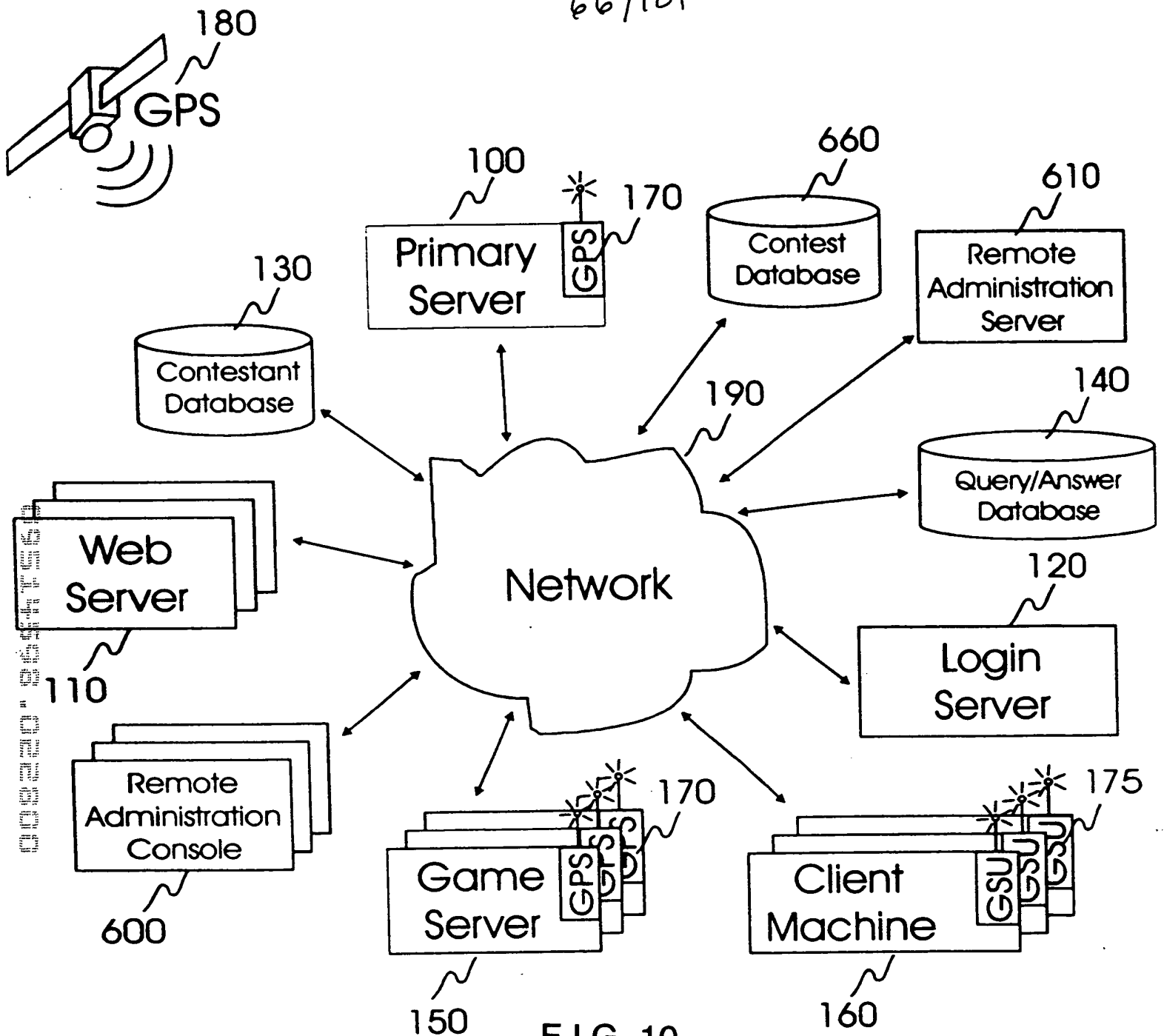


FIG. 10

67/101

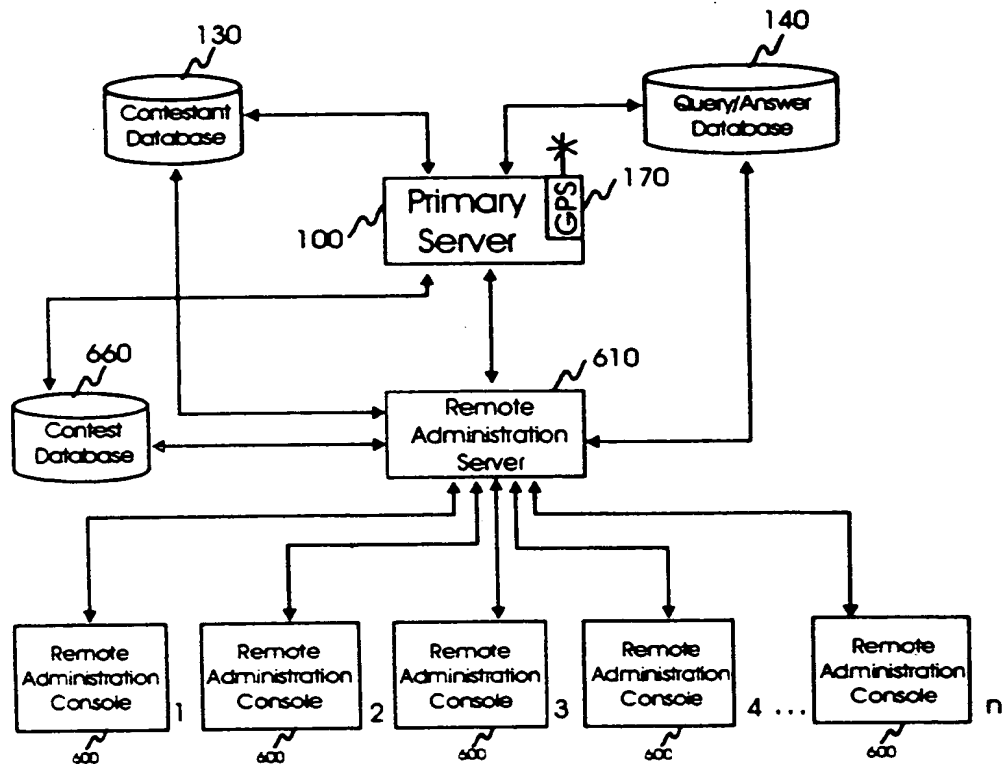


FIG. 10A

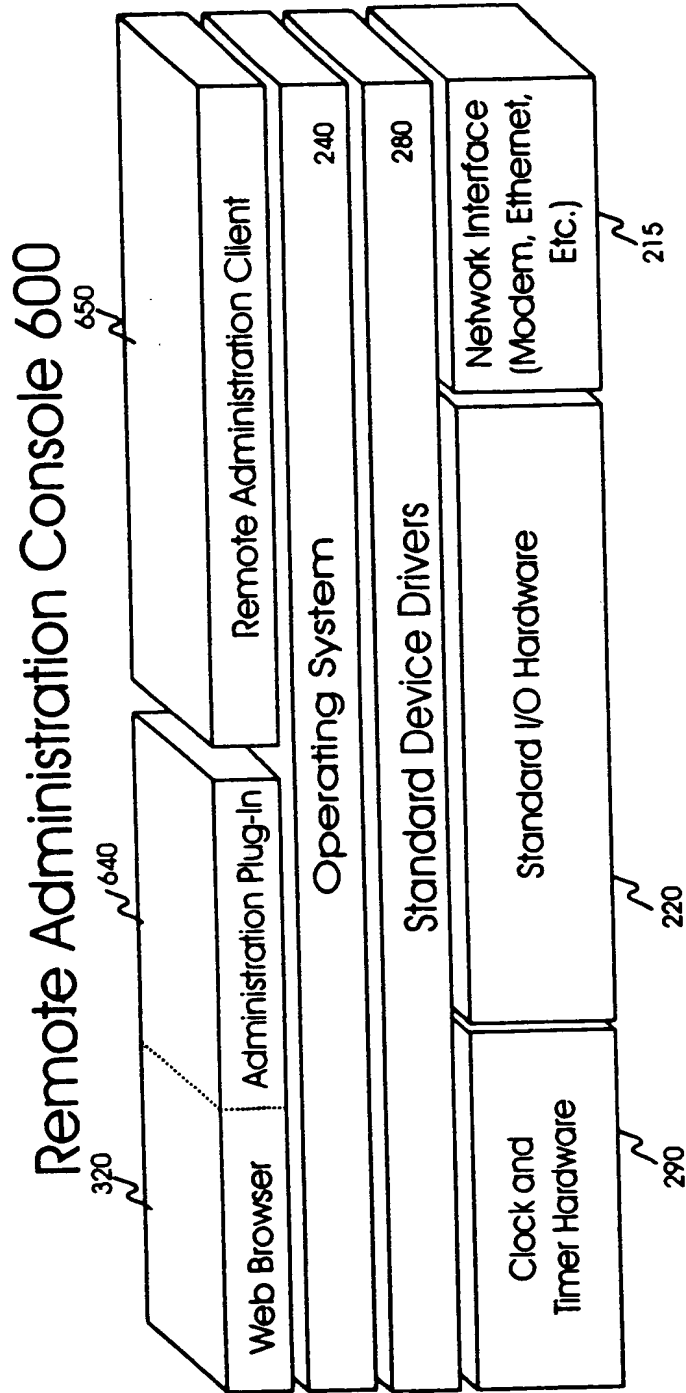


FIG. 10B

69/101

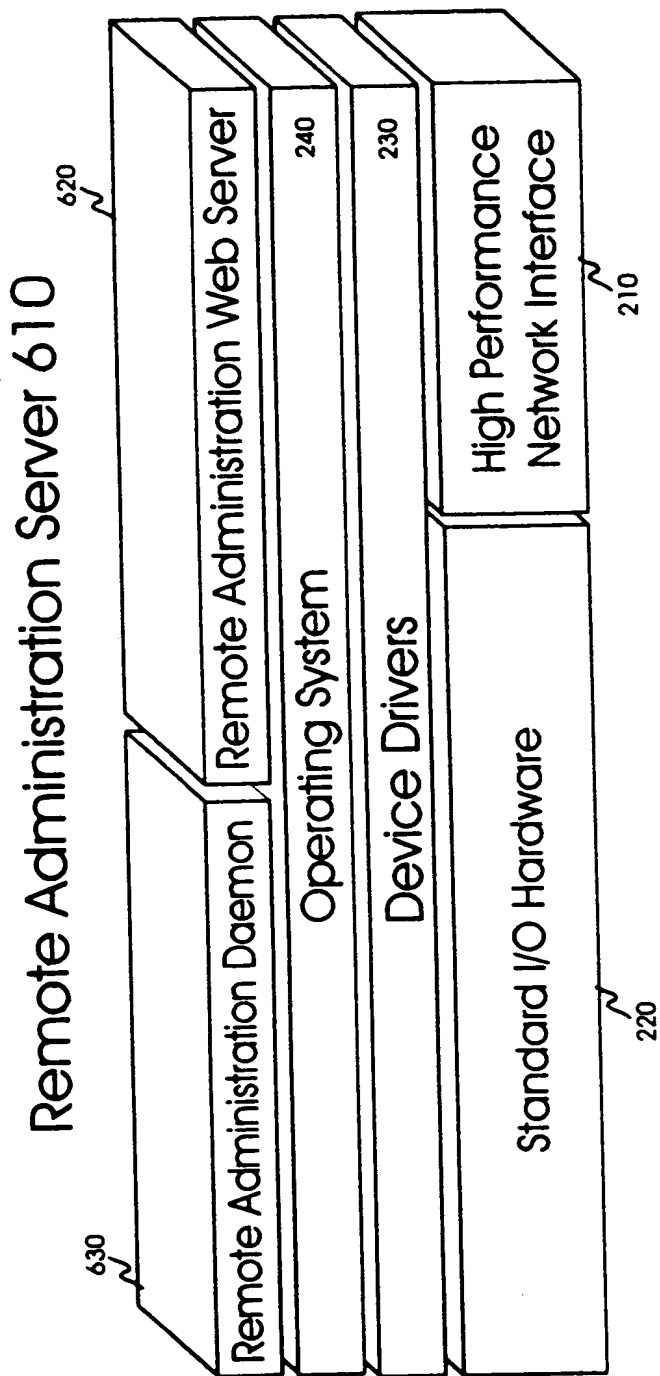


FIG. 10C

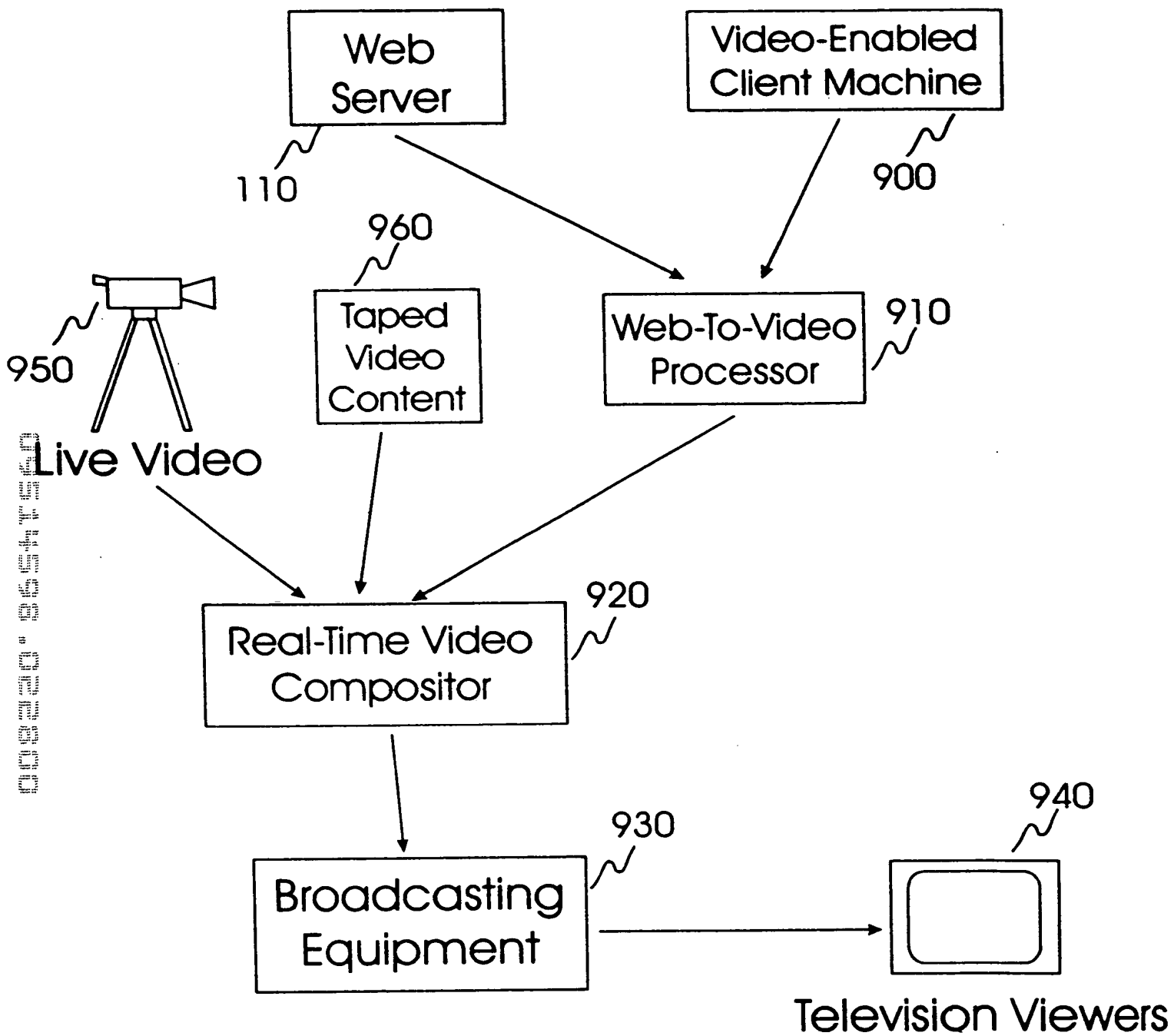


FIG. 11

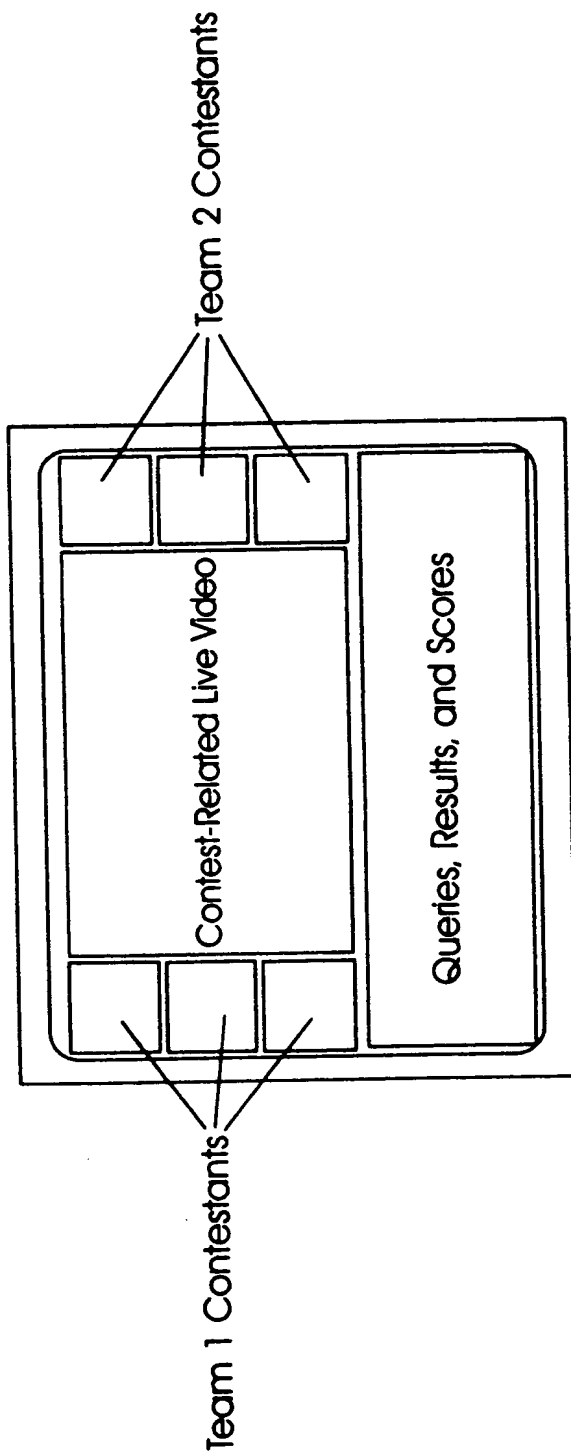


FIG. 11A



**FIG. 12**



# Set-Top Client Machine 970

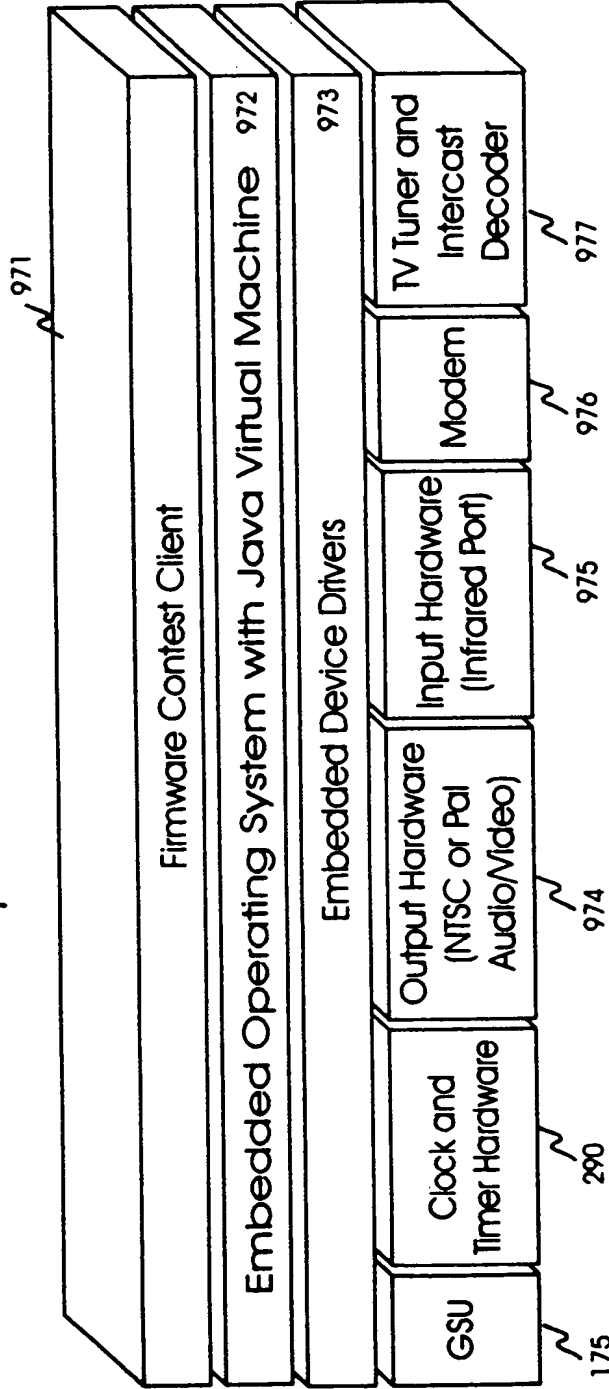


FIG. 12A

## Examples of GSU Inputs for Time and Space Stamping

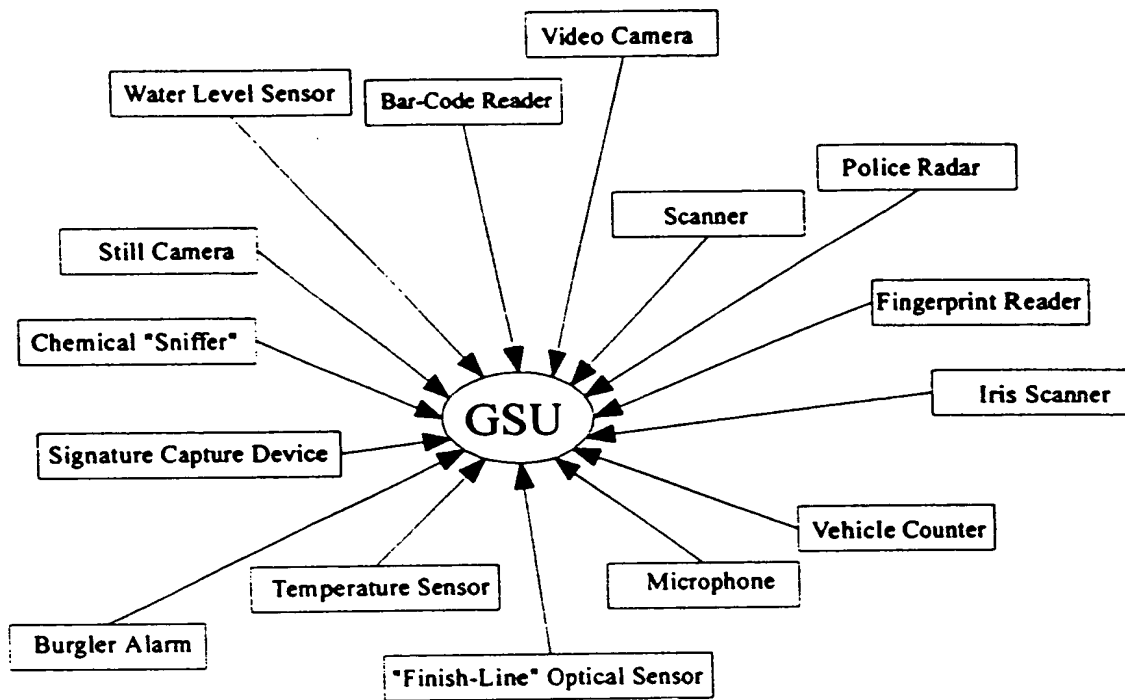
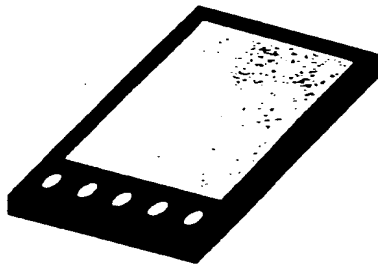


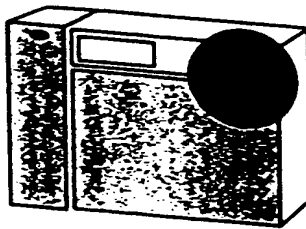
FIG. 13

75/101

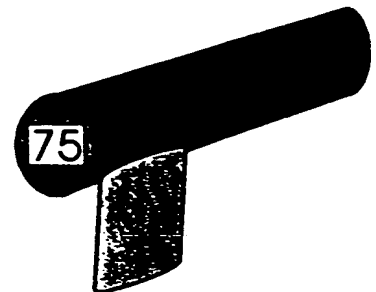
## Embedded GSU Applications



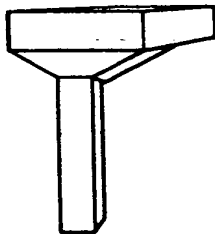
Handheld  
Computer



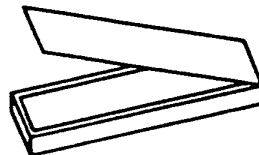
Digital  
Camera



Police  
Radar



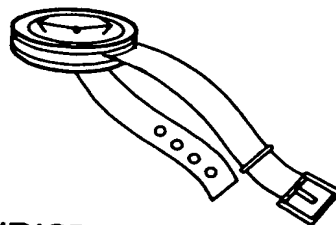
Bar Code  
Scanner



Scanner



CABLE TV SET-TOP  
BOXES



WRIST WATCH

FIG. 14

75/101

76/101

## Peripheral GSU Configurations

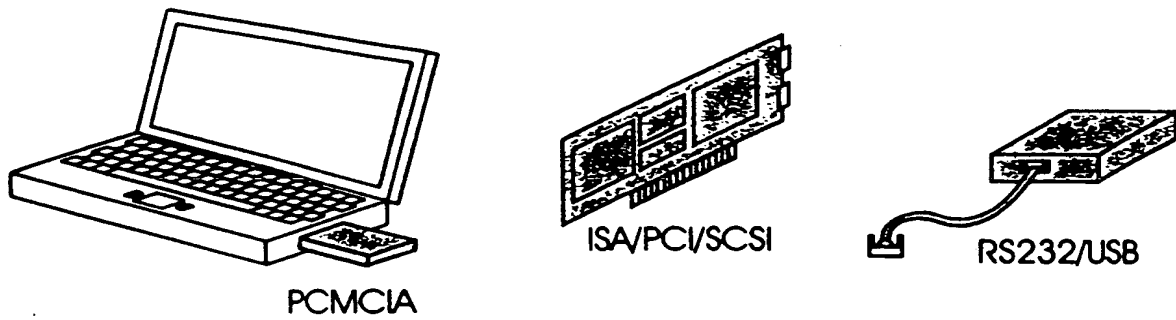


FIG. 15

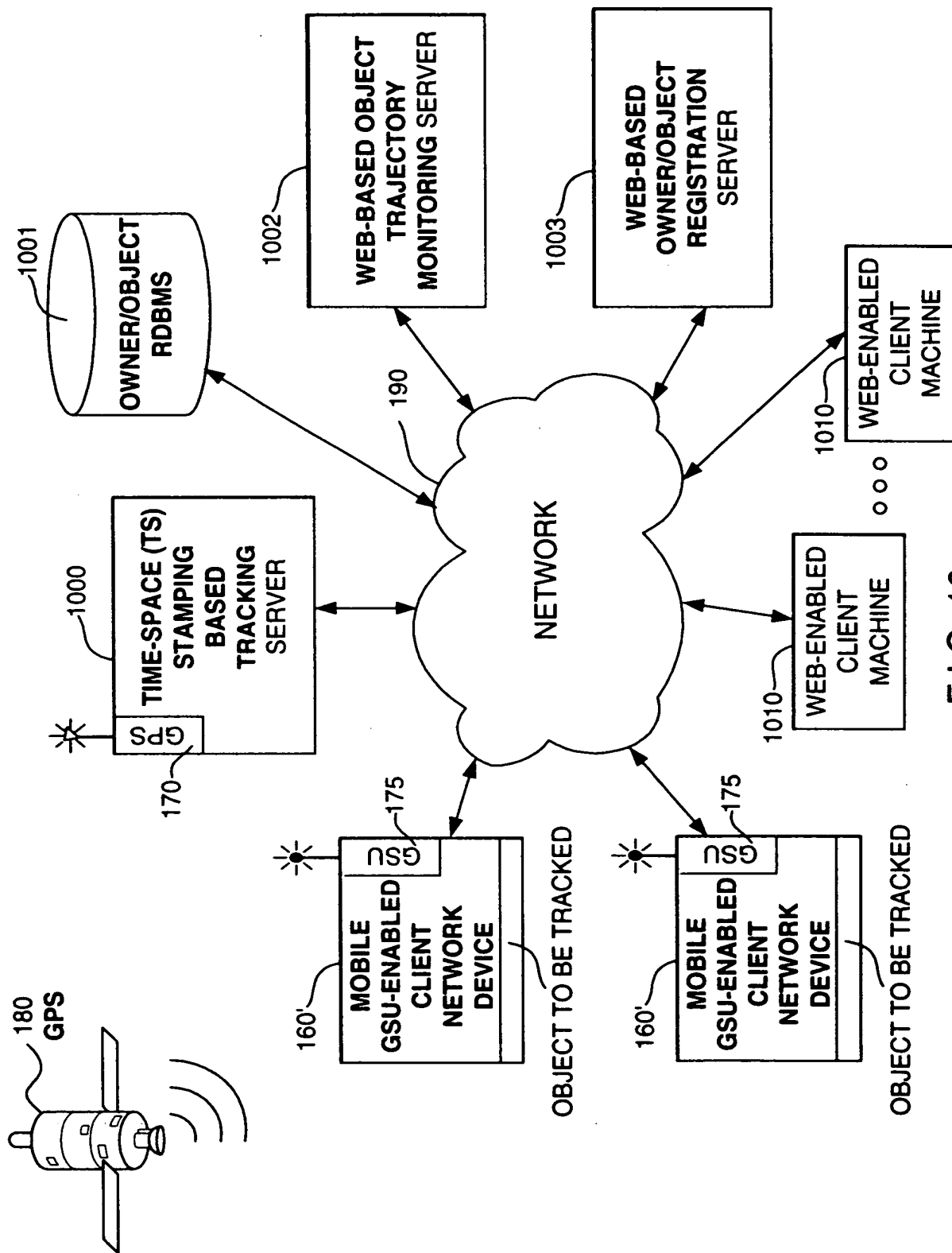


FIG. 16

340'

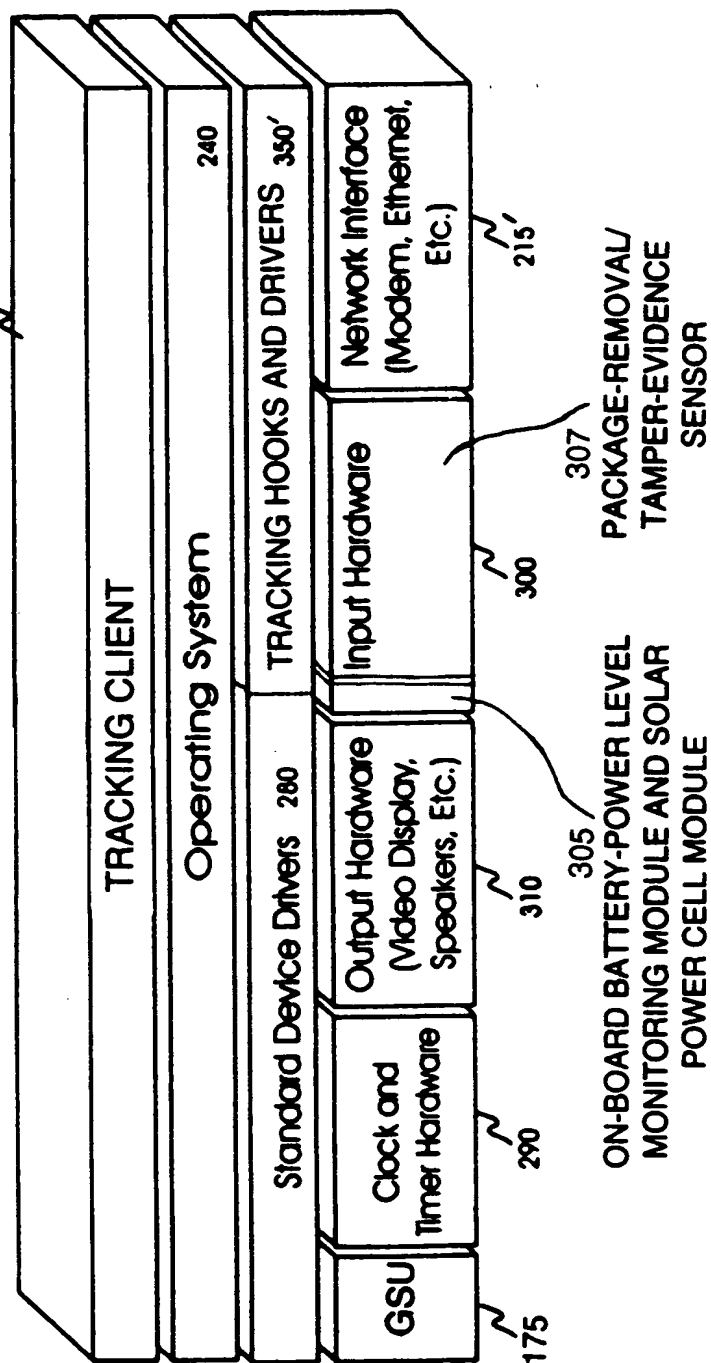


FIG. 16A

79/101

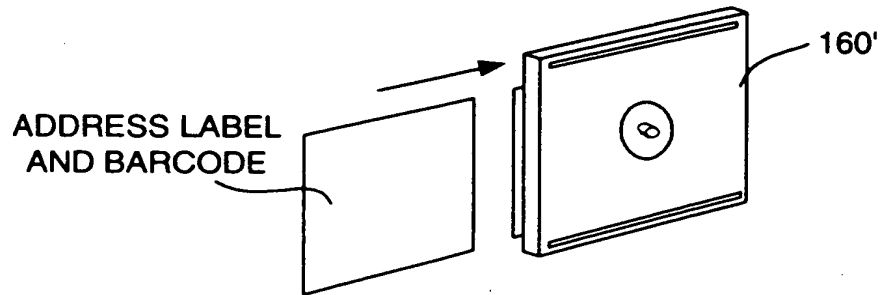


FIG. 16A1

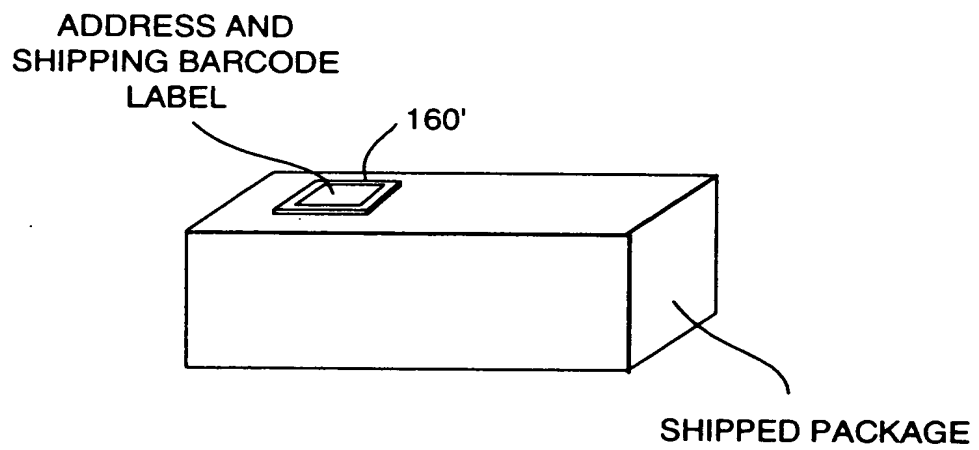


FIG. 16A2

TS-STAMPING BASED TRACKING SERVER 1000

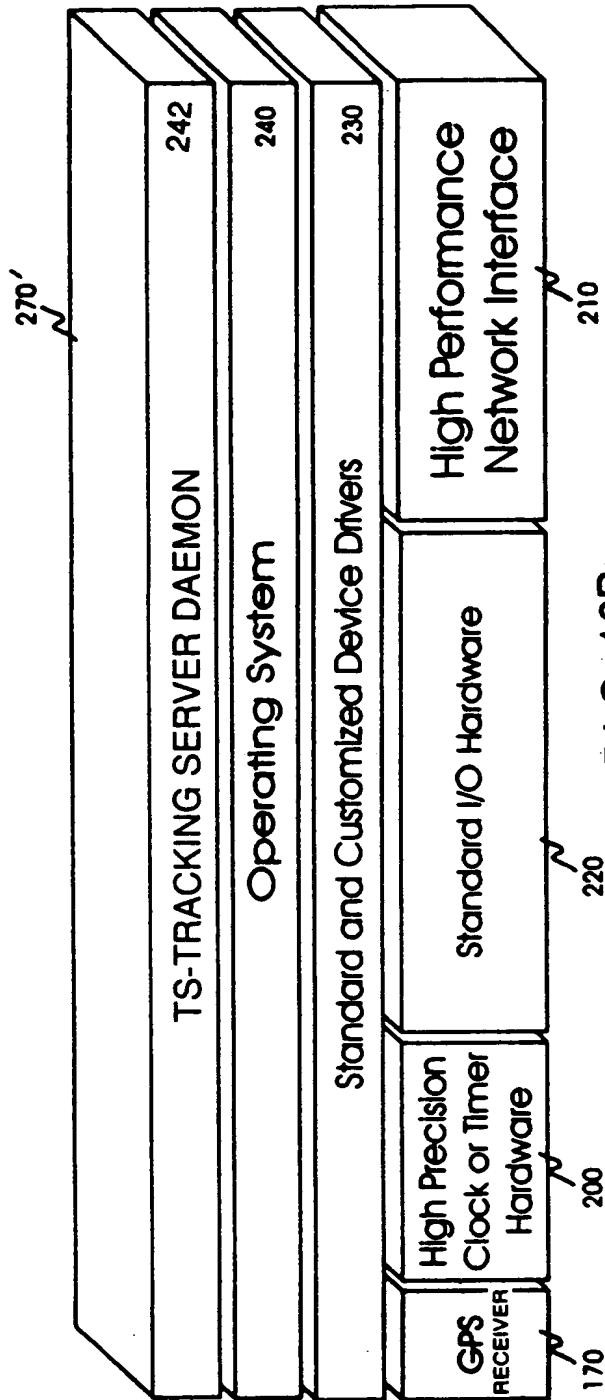


FIG. 16B



WEB-BASED OWNER/OBJECT REGISTRATION SERVER 1003

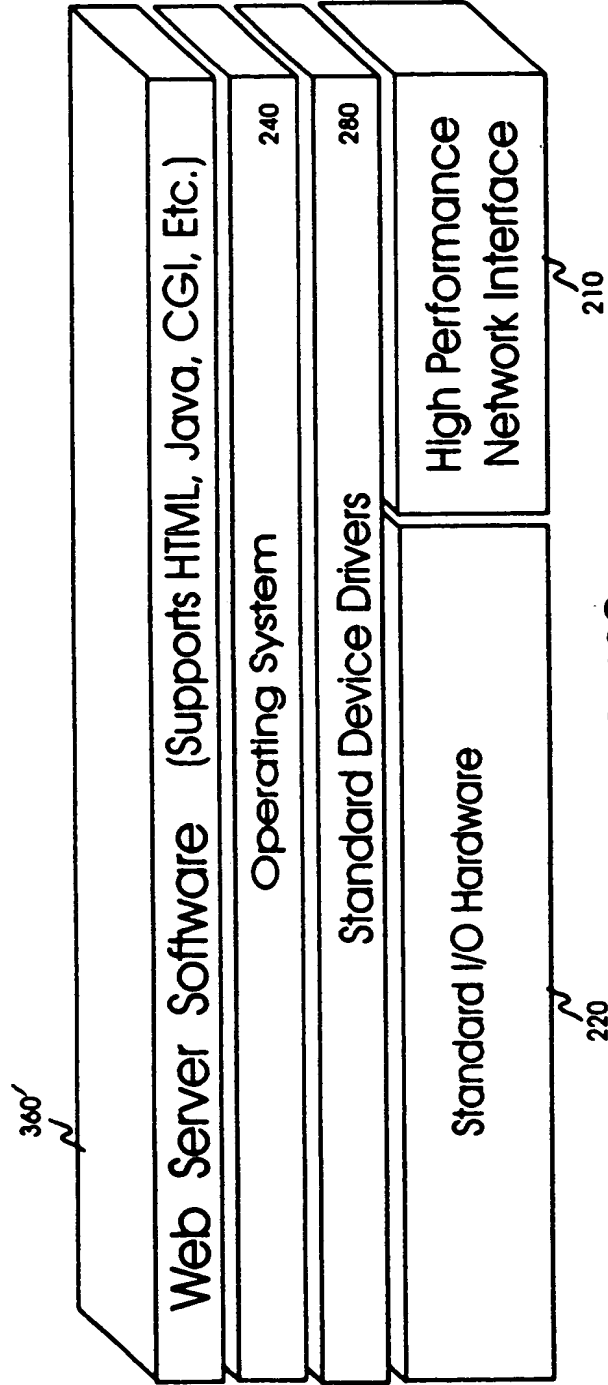


FIG. 16C

WEB-BASED OBJECT TRAJECTORY MONITORING SERVER 1002

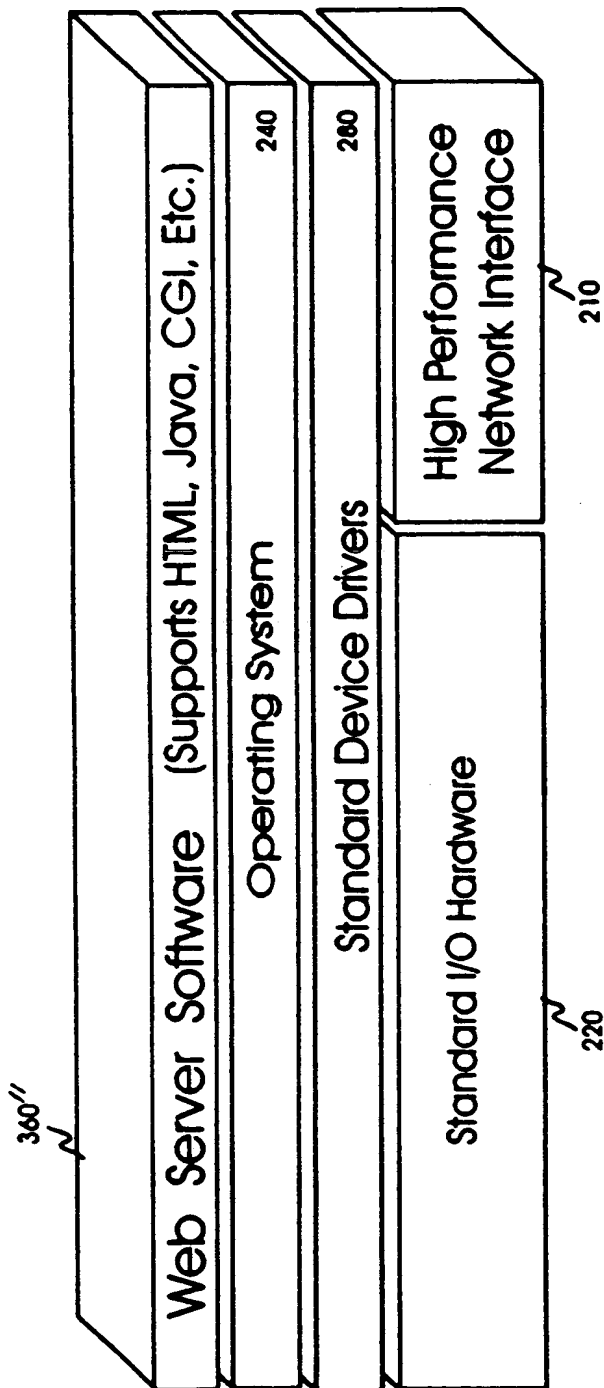


FIG. 16D

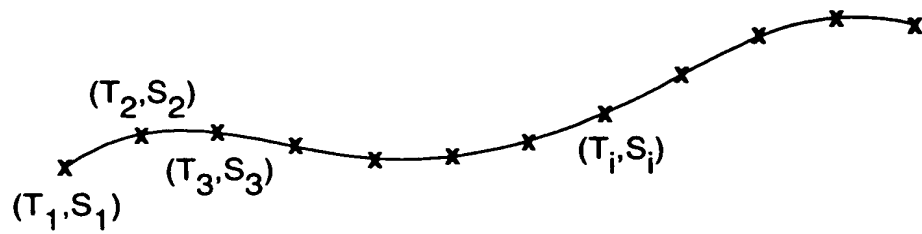
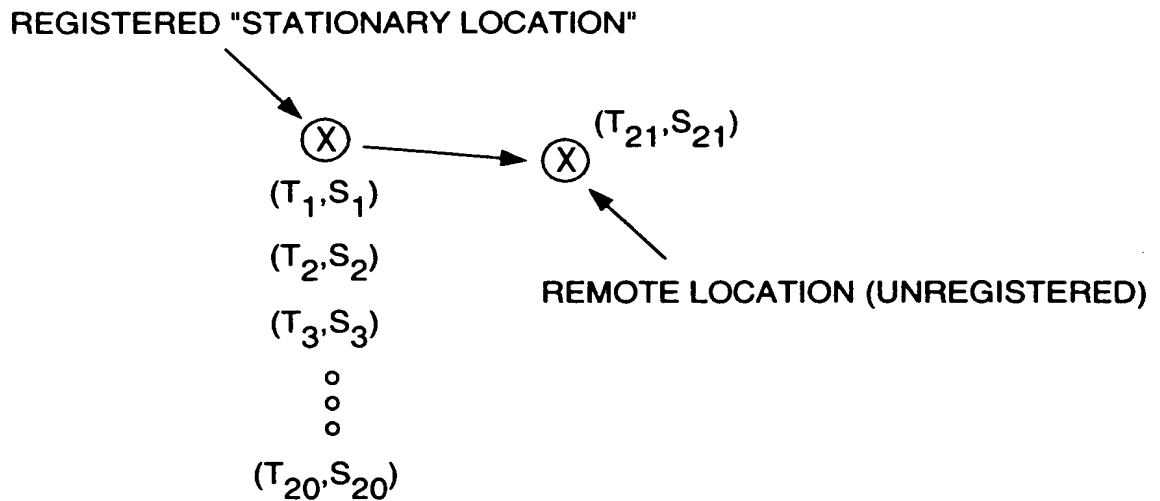


FIG. 17A

## TIME-SPACE (T,S) STAMPING OF STATIONARY OBJECTS TO DETECT MOVEMENT THEREOF



**FIG. 17B**

**FIG. 18**

OBJECT NAME	OBJECT OWNER	GSU'S UNIQUE ID CODE (UIC)	TIME-SPACE STAMP	TIME-SPACE STAMP
TOM SMITH	TOM SMITH	1567N2B0	(T <sub>1</sub> ,S <sub>1</sub> )	(T <sub>i</sub> ,S <sub>i</sub> )
JERRY DOG	TOM SMITH	1568N2B0	(T <sub>1</sub> ,S <sub>1</sub> )	(T <sub>i</sub> ,S <sub>i</sub> )
VOLVO S80	TOM SMITH	1569N2B0	(T <sub>1</sub> ,S <sub>1</sub> )	(T <sub>i</sub> ,S <sub>i</sub> )
○ ○ ○	○ ○ ○	○ ○ ○	○ ○ ○	○ ○ ○

# GSU-ENABLED CLIENT NETWORK DEVICE 160"

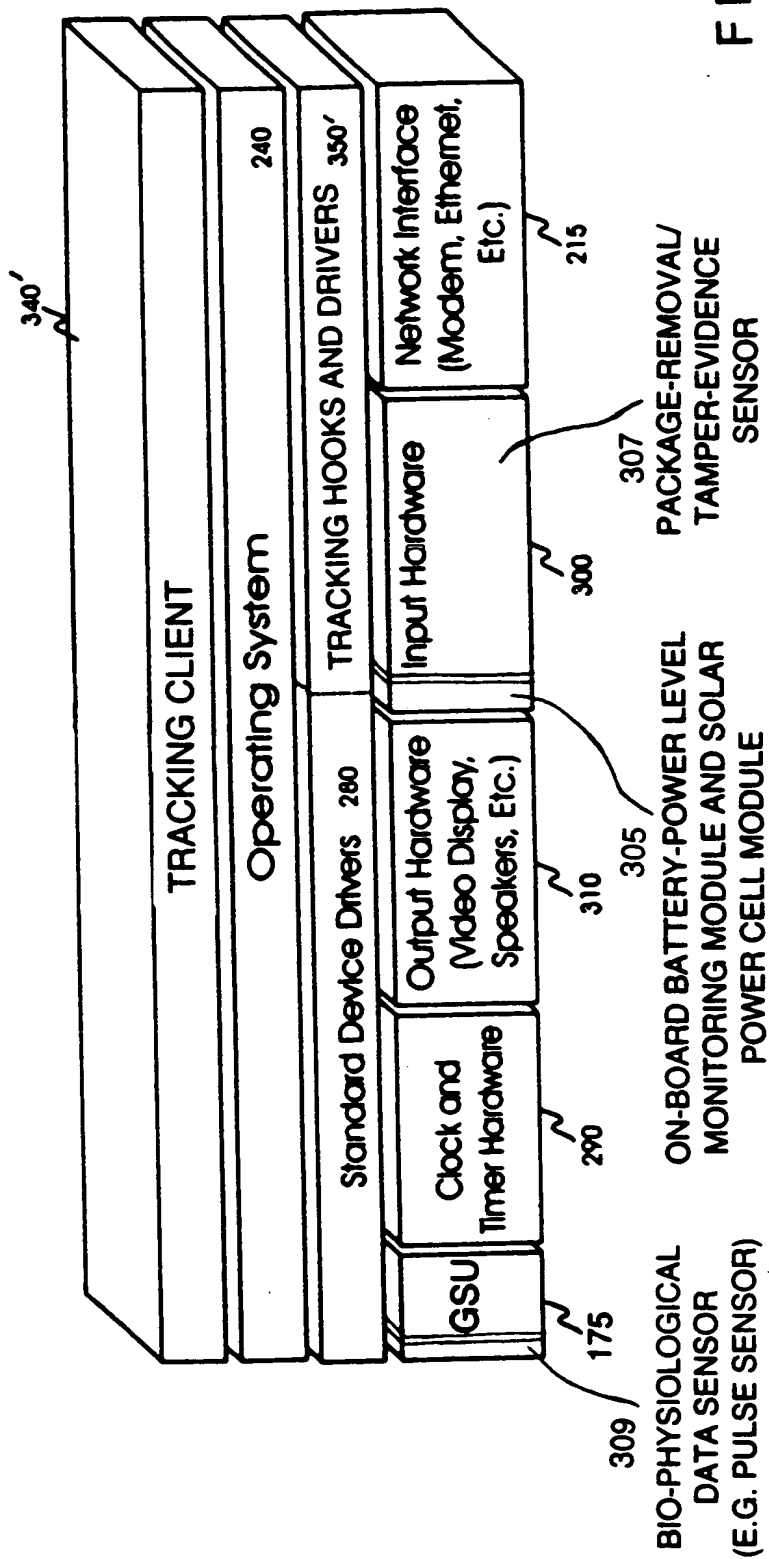


FIG. 19A

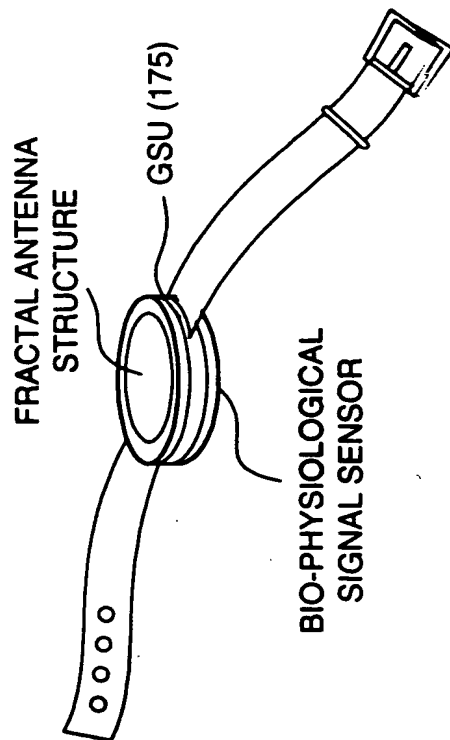


FIG. 19B

TIME-SPACE BIOPHYSIOLOGICAL (TSB)  
STAMPING BASED TRACKING SERVER 1007

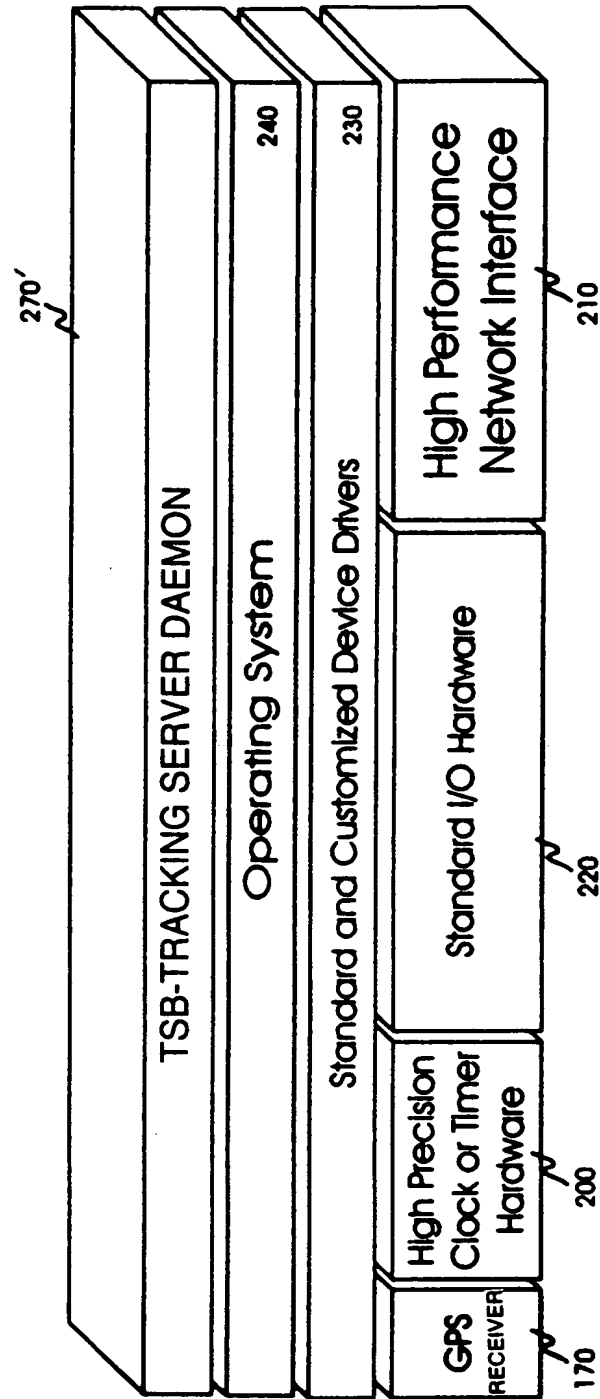


FIG. 20

## OWNER/OBJECT DATABASE TABLE

FIG. 22

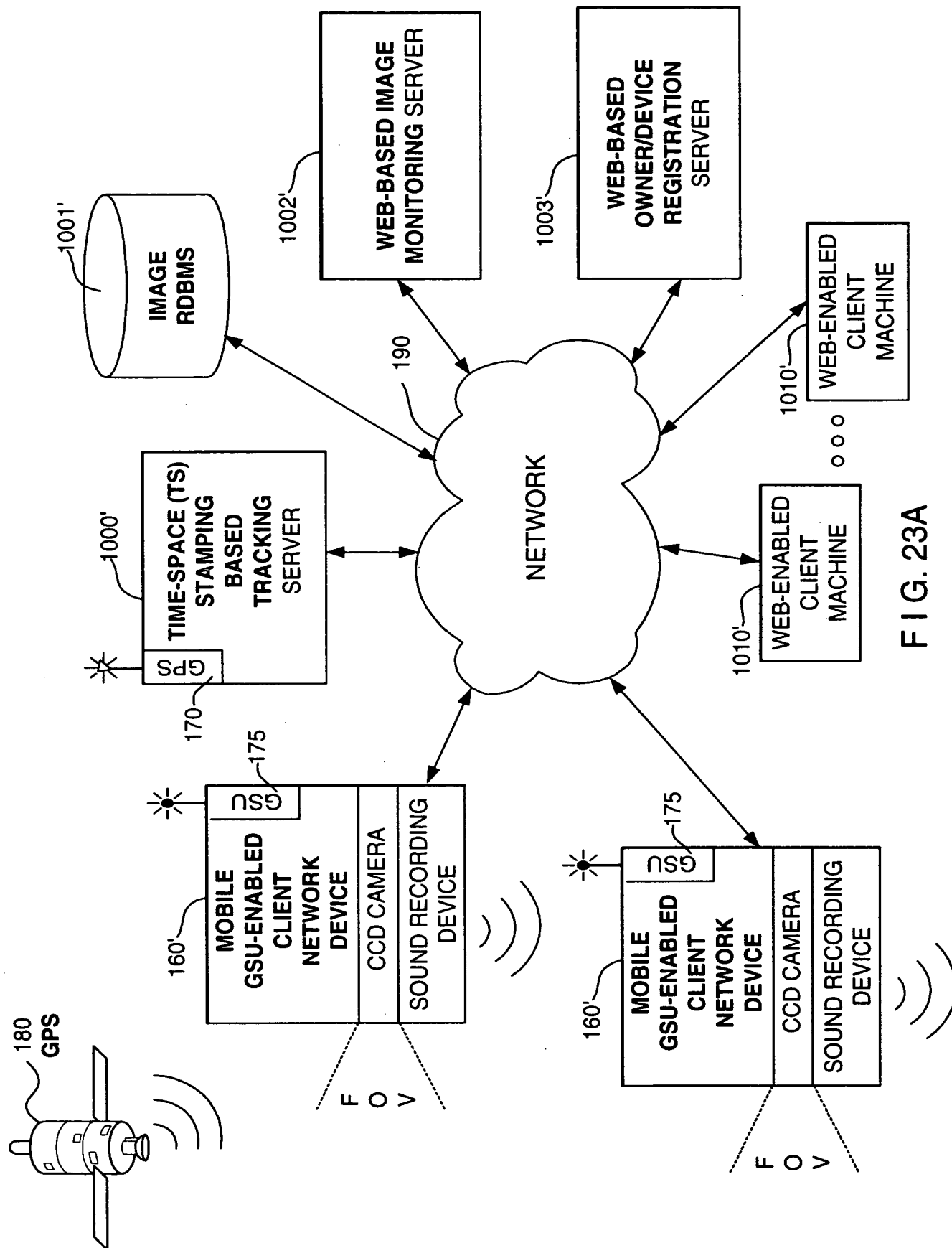
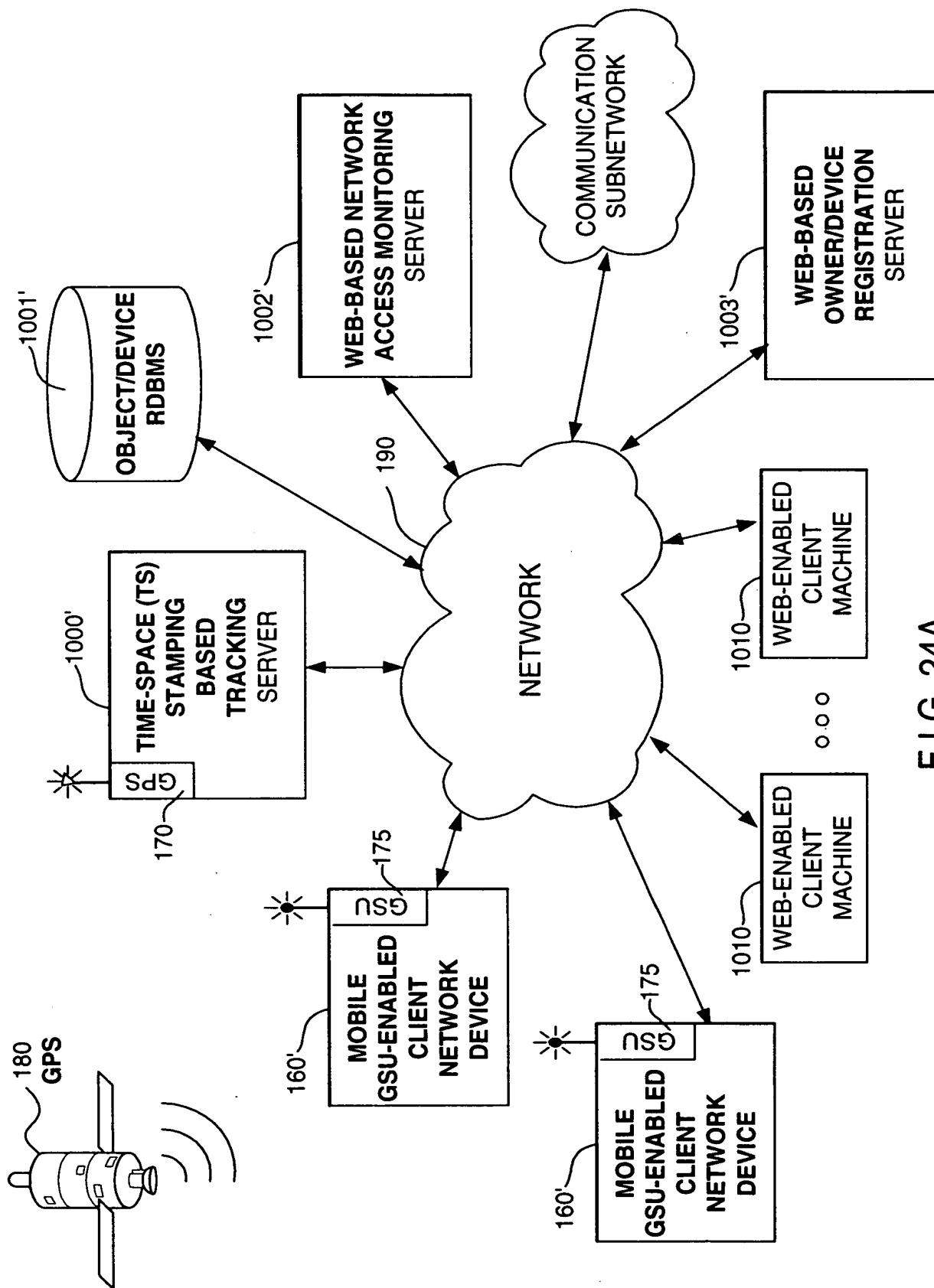


FIG. 23A



GSU-ENABLED CLIENT NETWORK DEVICE	TS-STAMPED CAPTURED IMAGE			
	T1	T2	...	TN
X125132			...	
X123561			...	
...				
X351275			...	

FIG. 23B





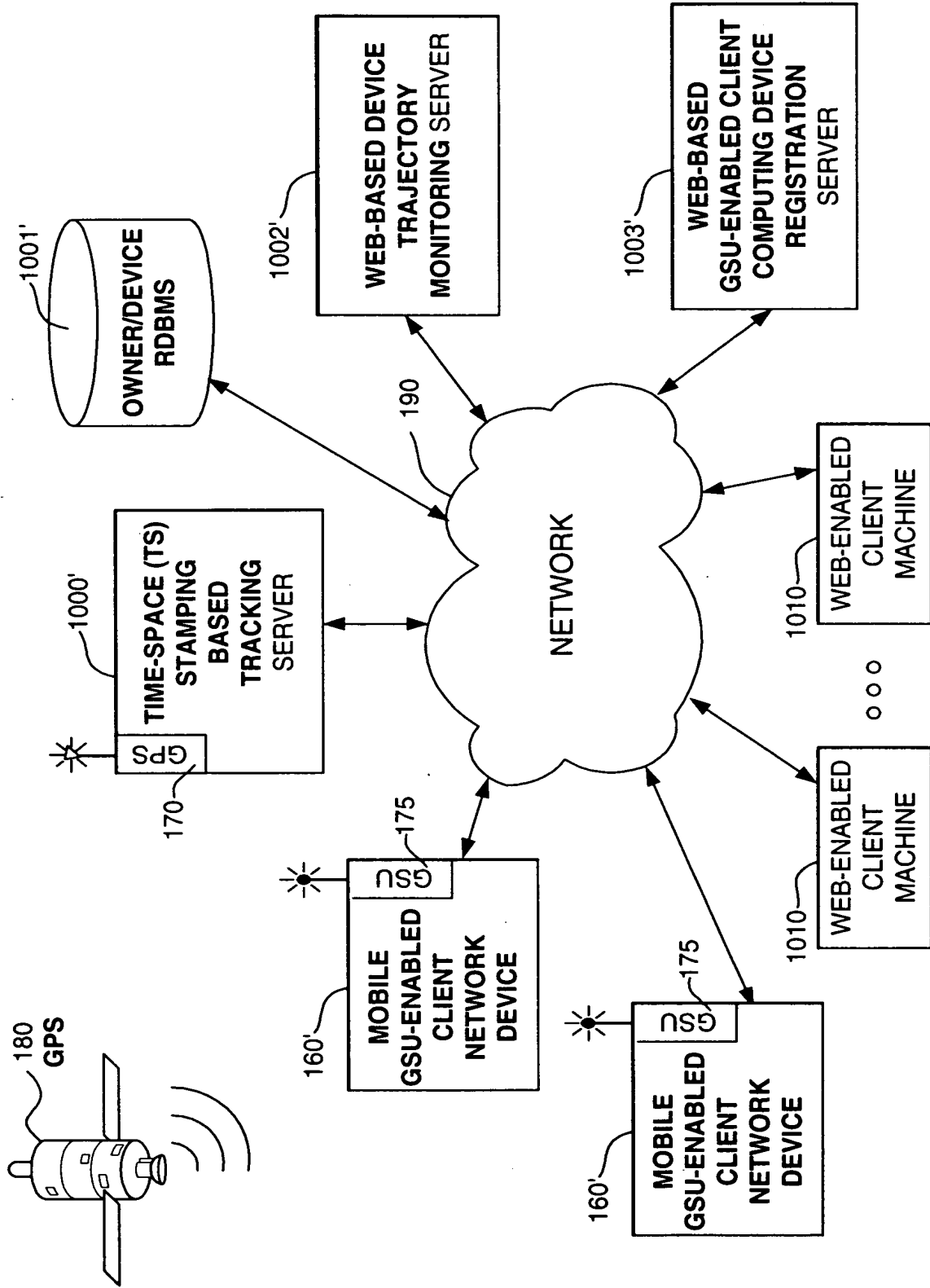


FIG. 25A



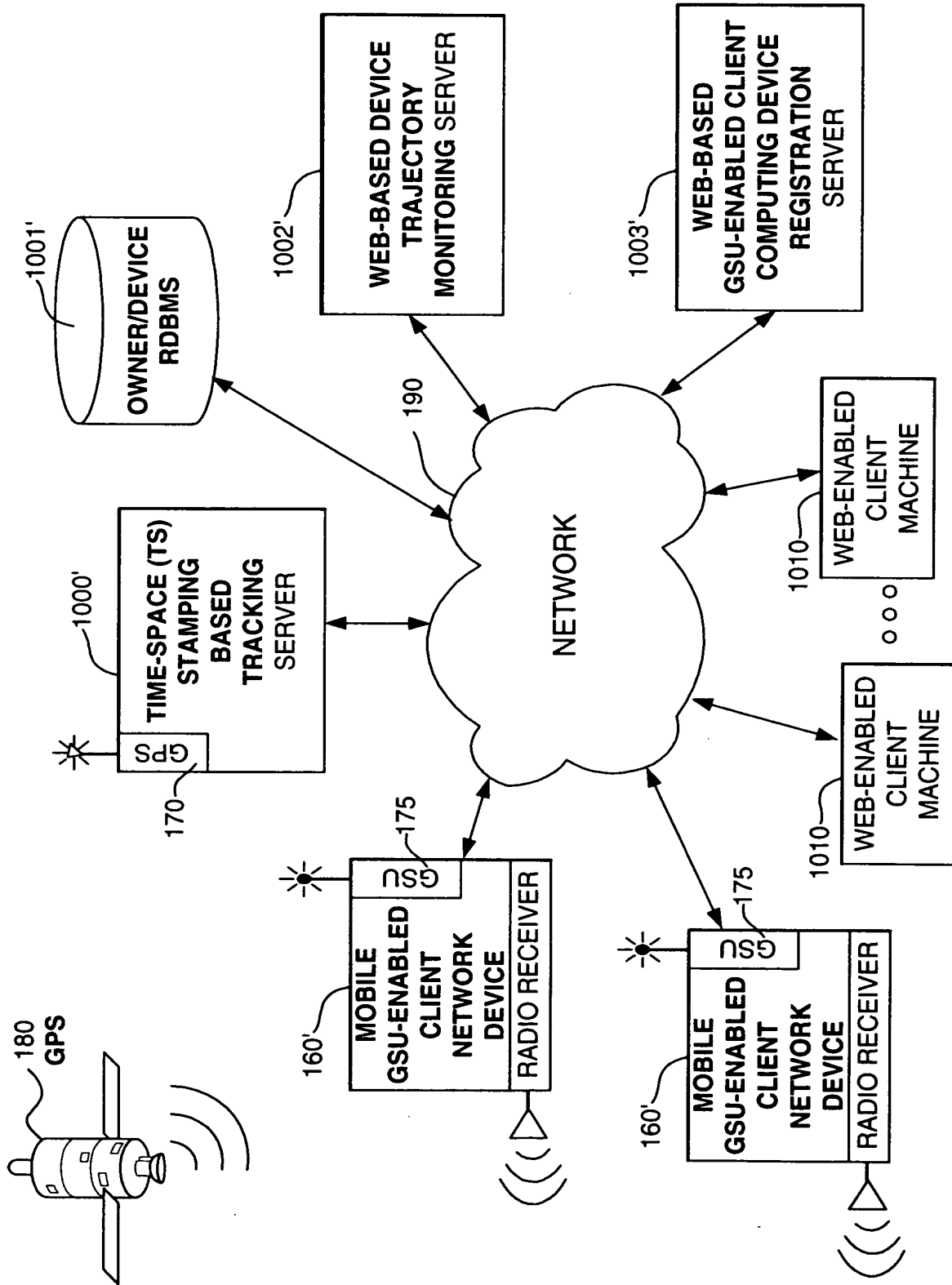
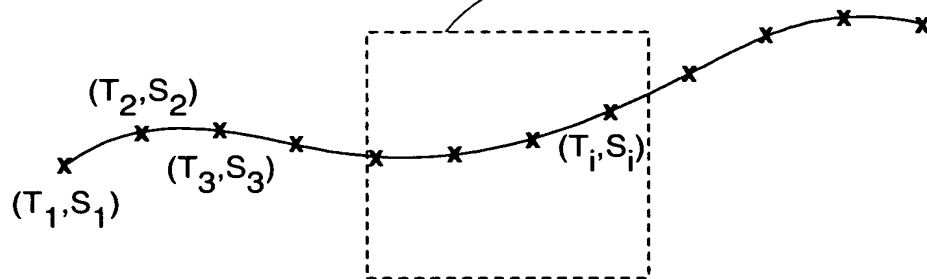


FIG. 26A



**FIG. 26B**

[illegible]

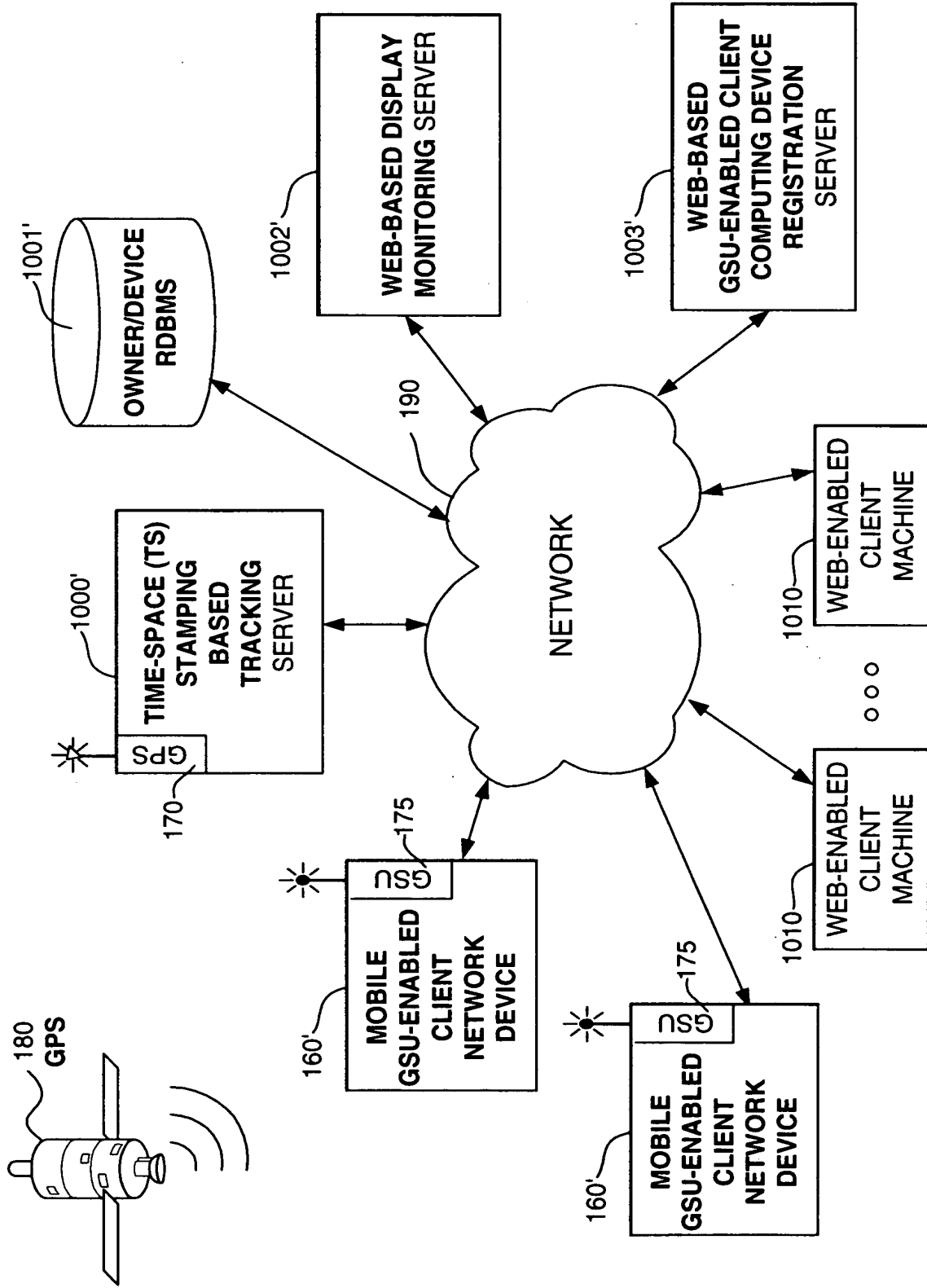


FIG. 27A



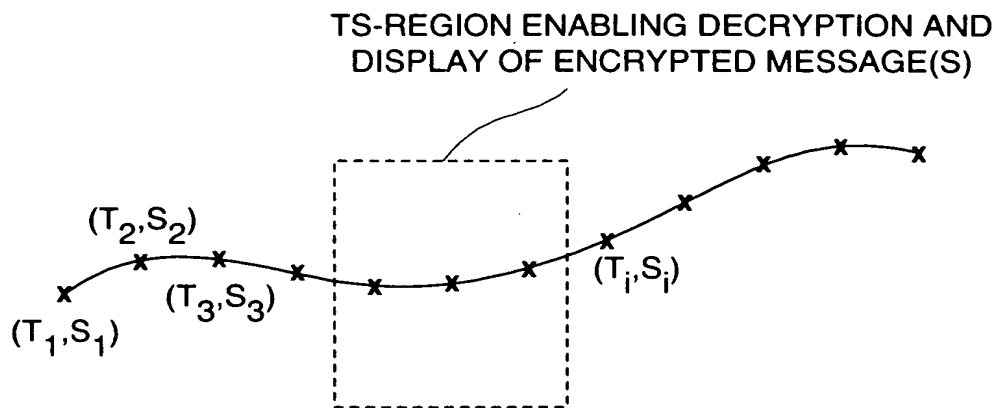


FIG. 27B

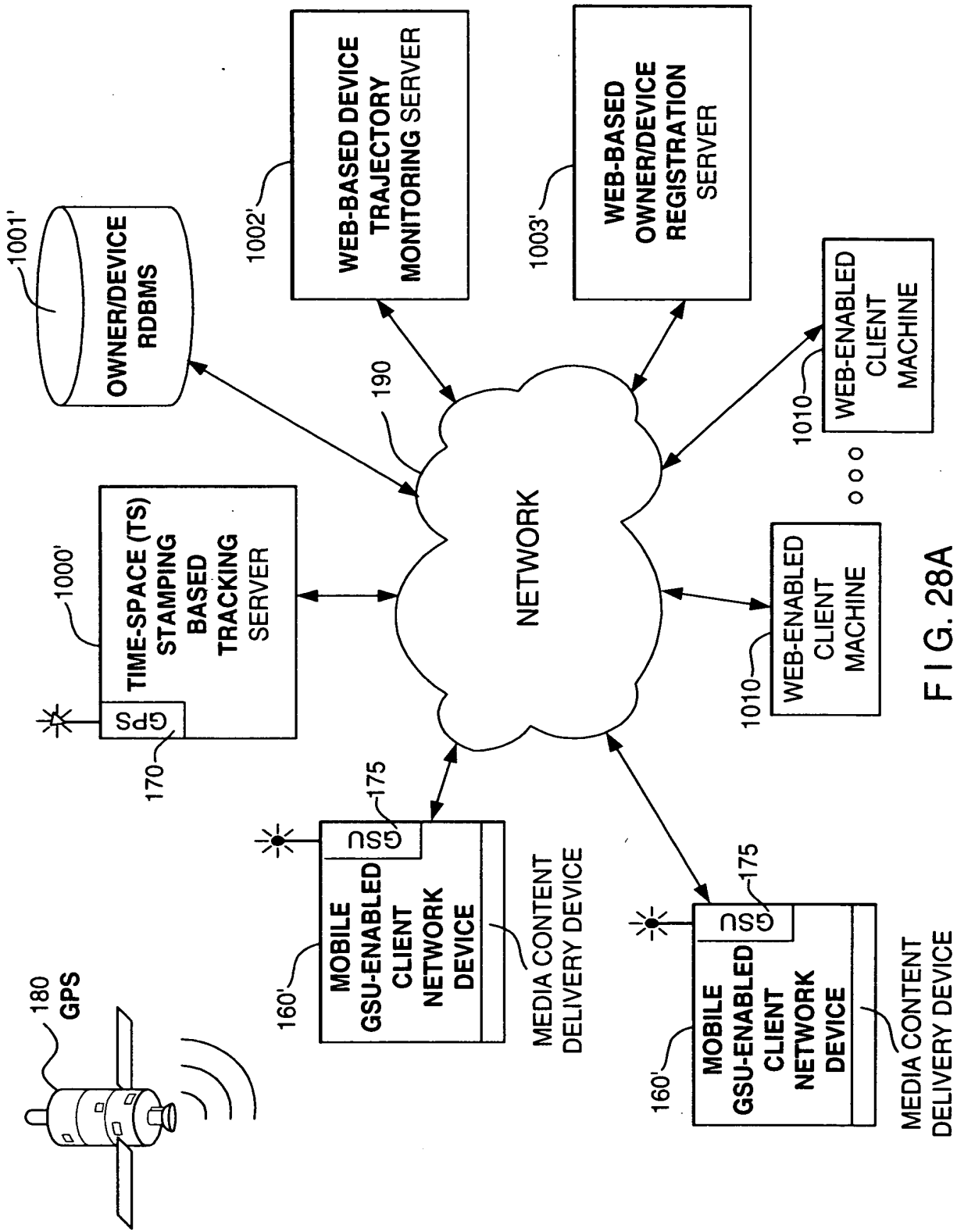
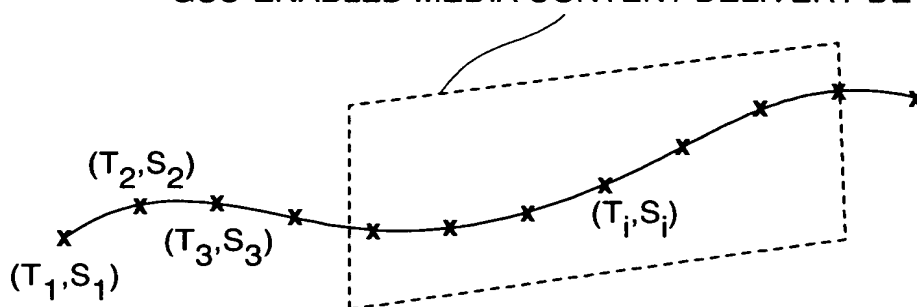


FIG. 28A

[illegible]

**FIG. 28B**

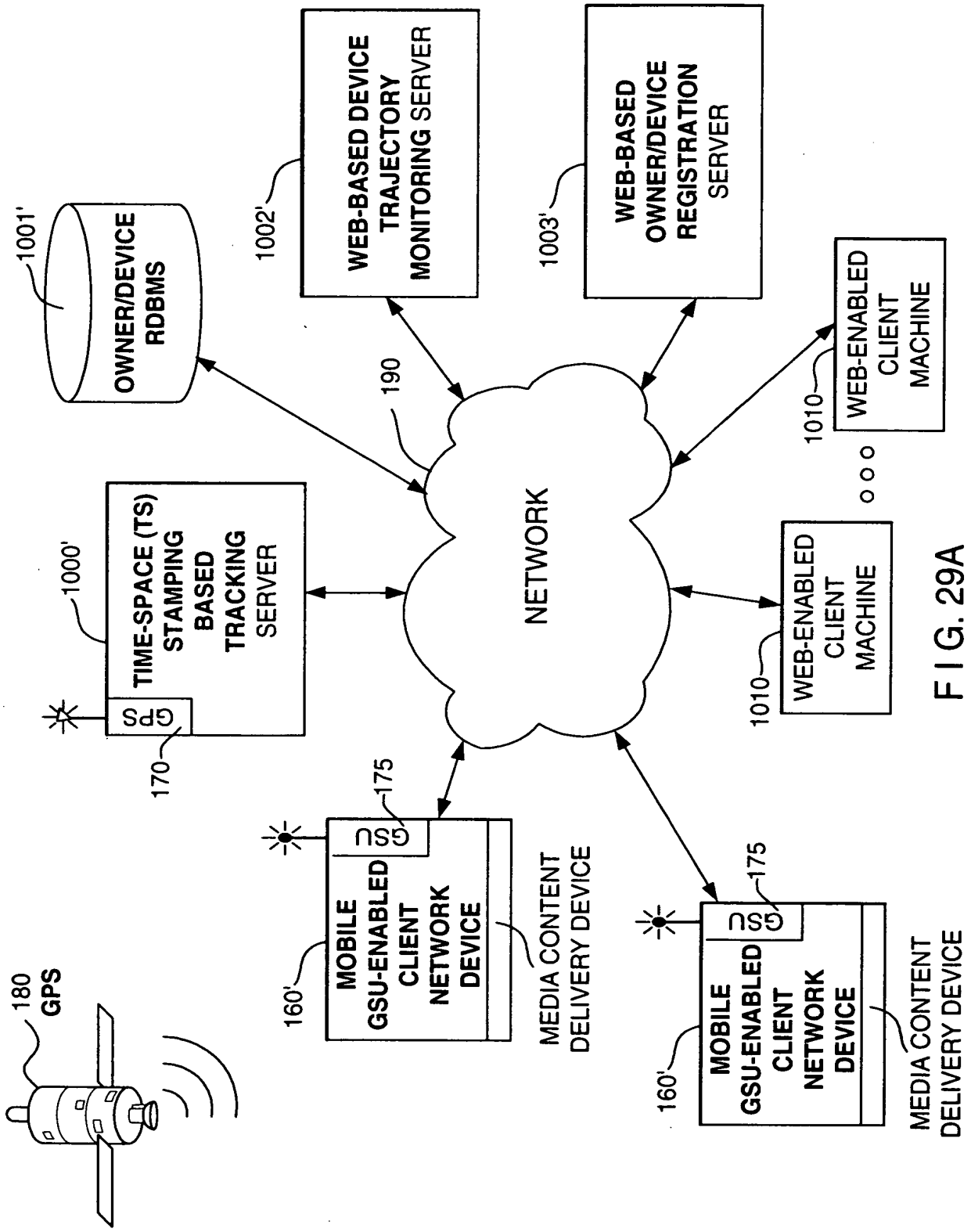


FIG. 29A

TS-REGION ENABLING OPERATION OF OR  
CONTROLLING A FUNCTION(S) WITHIN A (PORTABLE)  
HOST SYSTEM OR DEVICE OF PRESENT INVENTION

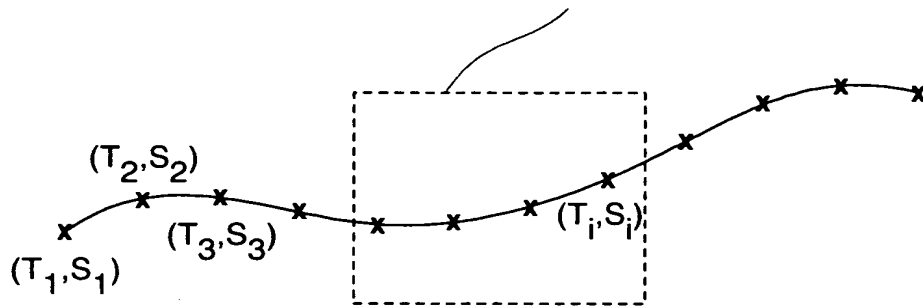


FIG. 29B